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ORIGINAL ARTICLES.

MODERN HOMEOPATHY AND MEDICAL SCIENCE.

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Recent addresses by Mr. Ernest Hart of London, and Professors Roberts and Cohen of Philadelphia, together with the agitation relative to the revision of the Code of the AMERICAN MEDICAL ASSOCIATION, have caused considerable criticism in this country, pro and con, relative to homeopathy. It is not a question of taste or of fancy for the laity; nor is it simply an indication of bigotry, if a physician declines to consult with a homeopath. If homeopathy is right, a very large majority of physicians are mistaken. As a class they can have no possible object for opposing homeopathy except a firm belief that it is radically wrong. If homeopathy is wrong, thousands of our citizens are deluded and defrauded by this form of quackery. It is, therefore, a proper subject for careful consideration in secular as well as professional journals.

When the writer decided to study medicine, the homeopathists were at the height of their glory. Their practice had been constantly gaining in popularity. In number of practitioners, compared with the profession at large, they had not yet begun to decline. The writer was surrounded by a homeopathic community. His most intimate professional friend was a homeopathic physician. The writer had read such tracts as "Facts, Solid Facts," which had been widely distributed by homeopathic firms, and which made the claims of the sect appear plausible. He knew several personally, who, after graduating from such reputable regular schools as the Medical Department of the University of the City of New York, and after practicing medicine for a time, had studied homeopathy, and then pinned their faith to the dogma, *similia similibus curantur*. He did not then know any one who had taken up scientific medicine after having practiced homeopathy. Neither did he realize that very many of those attempting to practice scientific medicine achieve unsatisfactory results, because they practice *empirically*, blindly trying to follow those better qualified than themselves, and failing to grasp the principles involved.

In the place of cool argument, too often the defenders of rational medicine descended to ridicule in speaking of homeopathy. Although refined homeopathy[1] may well be called "the little end of nothing, whittled out sharp, and cut off," or "the shadow of the chicken in the pot," ridicule alone seldom convinces. Ribald jests arouse sympathy for the oppressed. On the other hand, a logical discussion, based upon admitted premises, proving rather, than asserting the ridiculousness of the claims, is both convincing and proper.

Considering his surroundings, therefore, it is not strange that the writer decided to become a homeopathic physician. During his course in the literary college he did some reading, and even as an amateur practiced a little very satisfactorily with the pellets provided by his homeopathic friend. This friend, a man of education, and a successful practitioner, did not indorse the refined homeopathy of the high potentists. He did not confine himself to drugs, nor to homeopathic preparations. He one day said to the writer: "I hope that you will become a homeopathic physician, but do not decide yet. You know something of the homeopathic practice. Take at least one year in ——— College," (naming a prominent regular school); "keep your eyes open, and compare the two schools carefully. Do not decide until the end of the year. I have no fear of the result." About the same time another friend and thorough scientist, advised: "Don't fool away your time studying homeopathic nonsense." The very natural result of these two pieces of advice was to strengthen the faith in homeopathy.

Sir Walter Scott once said that he could always learn something, even from the most ignorant people; and the old English poet puts these words into the mouth of the shepherd as he talks with the Abbot of Canterbury:

> "Did you never heare yet,
> That a fool he may learne a wise man witt?"

The most learned and gifted may often profitably study the ideas of those less distinguished. The intolerant man is essentially a small man, whether he be found in law, theology, medicine, or in business. We would not agree with those who would ignore the homeopathists because of their inconsistencies or on account of their ridiculous pretensions. We would rather carefully examine both their doctrine and their practice, for truths which had hitherto been too much neglected. Truth is everywhere, and the successful physician must be ready to receive it wherever found. Though fully convinced that homeopathy is a delusion, and that there is no legitimate excuse for the existence of the sect, we believe that much good would result if the history of medicine, including that of the prominent sects, should be more thoroughly studied.

The object desired—the obliteration of the homeopathic sect—is not secured by ignoring its members, as some of the more narrow-minded doctors have done in the past. A very successful homeopath once said to the writer: "If I were to begin now the study of medicine, I should not go to a homeopathic school. It was the intolerance of the general profession that led me to study homeopathy." If, as regular practitioners claim, homeopathy is a delusion, rational medicine will lose nothing by association with homeo-

[1] The expression, "refined homeopathy," as used in this article is not intended as ironical, but as descriptive of the purest form of the doctrine, and represented by the high potentists.

paths, while the latter class may thereby be the better able to see the truth as it is.

The writer entered a regular college, located so close to a homeopathic institution, that the students frequently visited from one to the other. The contrast was very marked. In one the tissues of the body were studied most minutely. In the other, they were described in general terms. In one the students were asked as to the exact effect of atropin upon the different parts of the eye, or the action of strychnia upon the spinal cord and nerves; or what drugs were indicated in a case of rapid heart beat, without structural change in that organ. The homeopathic professor inquired what remedy was indicated if the patient dreamed of money, and what drug had given rise to the proving, "He sees a black gauze before the right eye."

The writer, during his first year in the medical school, became thoroughly disgusted with homeopathic superficiality, and ever since he has carefully sought for the causes of the former growth of the sect. He is thoroughly convinced that no one thing has done so much for them as the intolerant contempt of many members of the regular profession, making them pose before the lay public as martyrs from professional jealousy.

The writer has sought, therefore, to present to his readers simply a plain argument, showing that the homeopathic practice is not scientific, but empirical; that their practice is inconsistent with their doctrine; and that there is no longer any excuse for the preservation of the homeopathic sect. Only a few of the many quotations which might be given to illustrate each point have been presented, taken always from standard works or from recognized authorities. For the convenience of the student reference is made, in most cases, to the source from which the quotation is taken. To guard against a possible misrepresentation of homeopathic teaching, the article has been presented to educated homeopathic physicians for criticism and correction, though it would be too much to expect that they would agree with the writer in all of his deductions.

In order to make some comparison of modern homeopathic practice with general results, letters were sent to several hospitals, asking for the mortality in certain common diseases, during the last five years. For various reasons no figures were received, either from regular or sectarian institutions. From a prominent homeopathic hospital the following reply was received. Considering the doctrine of the potentist portion of the sect, the reply is noticeable. It said: "Our surgical service has been so much larger than the medical, that the statistics of the latter would give very little of value for comparison."

It is proper to state that, though the *sect* is not recognized by the regular profession, graduates from homeopathic colleges are recognized, just in proportion as they abandon homeopathy and call themselves simply physicians. As such they may join many of the regular societies.

Not from any feeling of personal animosity; not to add fuel to the fire of factional strife; nor in any way to attempt to restrict that freedom of action which should be exercised by every physician; but in the hope that in some degree they may help to hasten the time when there shall be *one* medical profession, whose members shall each feel free to use his own individual judgment, unhampered by dogmatic barriers, and all shall meet on one common ground for the advancement of science, and the benefit of humanity, the following pages have been written.

Medicine is a science and an art. Originally the art element was the more prominent. Isolated facts were observed by the practitioner, who also collected information from others. These observations were used in the treatment of future cases. Reason entered but slightly into the practice. Success depended largely upon natural talent and memory.

Though neither the most successful, nor the most to be commended this method, called empirical, because based solely on practical experience, is still more or less common. If the empiricist is especially clear-headed, he may be able to select his remedy with considerable skill, but he has no definite idea of what he wants to do or how his medicine works. He has in mind only the ultimate object. A person may go to New York from Philadelphia by way of Buffalo, but he may save both time and trouble by going more directly. In a like manner, a physician may cure his patient much more quickly and satisfactorily with one remedy than with another. The empiricist, having in mind only the ultimate object, without understanding the intermediate steps, is liable to take a very roundabout way. Empiricism, therefore, is nearly a pure art.

The *science* of medicine began when the accumulation of observations made classification a practical necessity. The difference between the scientific and empirical practice of medicine may be illustrated by other natural sciences. In botany, for example, the empiricist, in trying to find the name of a new plant, must look through the descriptions of all species, until he finds one applicable. Such a botany as he would construct would be a ponderous volume, since to give a full description under every name would necessitate great repetition.

The scientific botanist would, at a glance, by generalization limit his investigation to a small family, and by the aid of further classification he would find the name of his specimen before the empiricist had fairly begun his search. The scientific botany by classification avoids unnecessary verbiage. With the same amount of information, therefore, it may be easily seen that the empiricist labors at a great disadvantage, compared with the scientist.

In every science, errors of observation have resulted in false classification, or in wrong deductions. Medicine is no exception, as the relics found in its nomenclature show. Arteries were called by that name signifying air-carriers, because in dissection they were found filled with air.

In the latter part of the eighteenth century a German physician, while laboriously translating an English work on materia medica, noticed an apparent similarity between the symptoms produced by Peruvian bark and those of malarial fever, for which the bark was considered a specific. He made a few experiments upon himself and friends, and in 1790 published to the world his dogma, *similia similibus curantur;* similars are cured by similars. Hahnemann was not the first to notice that patients are sometimes benefited by drugs having effects closely resembling the disease treated. Hippocrates, over four hundred years before the Christian era, prescribed for mania "a draught made from the root of a man-

drake, in a smaller dose than sufficient to produce mania." We find in literature many other suggestions pointing to similar observations. Paracelsus, over two hundred and fifty years before Hahnemann, wrote, "*similia similibus curantur*," and in his Fragmenta Medicina he further wrote, "*similia, similis cura, non contrarium*." Hahnemann was the first, however, to attempt to formulate a system upon this as an universal law. He called his system, "homeopathy," from Greek words signifying a similar condition, and coined the name, "allopathy"—opposing condition—as descriptive of the common practice.

That Hahnemann greatly benefited humanity and medical science, no careful student may deny. He stimulated the study of the action of drugs, and showed that large doses are productive of more harm than good in many cases. His greatest service to the profession was the substitution of simple drugs in the place of the heterogeneous mixtures formerly used, thus rendering the remedies at the same time more certain in action and less unpleasant to take.

At the time that Hahnemann first published his dogma, the world was in a good condition to receive it. Medical practice was far from satisfactory. Purging, bleeding, blistering, and other weakening practices were carried to a great excess. "Shot-gun prescriptions," i.e., mixtures made of a large variety of drugs in the hope that something might "hit the case," were common. It is not at all improbable that the doctors then did far more harm than good.

A few years before, in Edinburgh, that independent and intelligent physician, Dr. John Brown, had called forcible attention to some of these facts. At home, owing to the general reverence for Cullen, Brown's work did not receive the attention which it deserved. On the continent, however, his book, written in pure Latin had aroused great and friendly interest. It caused men to think, and to look about for something better. His ideas of treatment were so thoroughly at variance with previous customs, that a majority could not at once adopt them. Hahnemann came forward and occupied a sort of middle ground. He abandoned the strong depleting treatment, but he theoretically recognized the necessity for something more than the stimulants suggested by Brown. He really demonstrated to the profession that no treatment at all is better for the patient than the unreasonable practice then in vogue, though it took half a century for the general profession to acknowledge this fact.

If the dogma, *similia similibus curantur* is granted, simple medication, that is, the use of one remedy at a time, is almost a necessary corollary. The distinguished doctor was also led to prescribe his drugs in minute doses.. The small amount of medicine given afforded a greater opportunity for the *vis medicatrix naturæ*, and in many instances perhaps the remedies assisted in the cure. It may be well believed that the early homeopathic practitioners were usually successful, compared with their neighbors, not because of deeds of commission, but of deeds of omission.

Emboldened by his successes, Hahnemann made the most ridiculous declarations. He taught that a medicine increased in potency in proportion to the amount of its dilution, and that the potency was also increased by shaking and by triturating. In his "Lesser Writings" he says: "If we wish, for example, to attenuate a drop of the juice of sundew to the thirtieth degree, but shake each of the bottles with twenty or more succussions from a powerful arm, in the hand of which the bottle is held—in that case this medicine which I have discovered, the specific remedy for the frightful epidemic—whooping-cough of children—will have become so powerful in the fifteenth attenuation (spiritualized), that a drop of it given in a teaspoonful of water would endanger the life of such a child; whereas, if each dilution bottle were shaken but twice, (with two strokes of the arm) and prepared in this manner up to the thirtieth attenuation, a sugar globule, the size of a poppy-seed, moistened with the last attenuation, cures this terrible disease (whooping-cough) with this single dose, without endangering the health of the child in the slightest degree." Hahnemann devoted much time to making provings, as they are called, of various drugs. He would take a dose of the substance to be proved, and then carefully note down all that transpired, even to the kind of thoughts or dreams that happened to flit through his mind. Since he failed to distinguish between accidental concurrences, and the results of the drugs, a large proportion of his provings are absolutely worthless. This is illustrated by the experience of Professor C. Wesselhoeft of Boston. He made some provings of carbo vegetabilis upon members of the class in the Boston University Medical School. Unknown to the class he began by administering blank powders of sugar of milk. He received from his subjects a large number of reports of symptoms produced by these blank powders. It must be admitted that Hahnemann and his followers have been very diligent in their enthusiasm, some even proving such things as lice and insects, the water in which a virgin had taken a bath, as well as bottled sunshine.

Until the last decade the homeopathic sect gradually increased in numbers, especially in the United States. According to the Homeopathic Directory, there are now in Europe 1,022 homeopathic physicians practicing medicine. In Great Britain and Ireland in 1875, there were 269 homeopathic doctors, and in 1889 there were 256, a decrease of nineteen, though both the population and the number of physicians in the land increased. Professor H. C. Wood remarks: "It is very interesting to note that the largest proportion of homeopathic practitioners, according to the population, on the continent of Europe, is to be found in Spain—the one country where the general level of education is the lowest."[2]

In this country, too, the number of homeopaths is not increasing as fast as formerly. In fact, though there is an absolute increase in the number of members of that sect in the United States, yet compared with the total number of doctors of medicine, and also compared with the population, there is a relative *decrease* in the number of those calling themselves homeopathic practitioners. The Illinois State Board of Health has probably done more than any other one organization to raise the standard of medical education in this country. To aid in this work, it has kept close track of the number of matriculates in, and the number of graduates from, every medical college in the United States and Canada, since the session of the schools in 1877-78. By the aid of its reports on medical education, published in 1885 and 1891, the following table has been constructed, giving the proportion of homeopathic graduates, in the

[2] Hare's System of Practice, Vol. I, p. 18, Note.

United States and Canada, from 1877 to 1890, inclusive. Though there happens to be no homeopathic school in Canada, and though the two countries are under different governments, their interests are so much the same, and residents of one so frequently go to the other for their professional education, that it seems proper to treat them as one country. To satisfy the desire of some to see the figures for the United States alone, these are also given.

RELATIVE PROPORTION OF HOMEOPATHIC GRADUATES TO TOTAL NUMBER OF MEDICAL GRADUATES IN THE UNITED STATES AND CANADA, FROM 1877 TO 1890, INCLUSIVE.

Session year.	Number. Total	Homeopaths.		In U. S. only.	
		Number.	Per cent.	Total Number.	Per cent. H'meops
1877-78	2,901	349	12.03	2,837	12.30
1878-79	2,882	316	10.99	2,775	11.39
1879-80	3,475	331	9.52	3,379	9.79
Total 3 years	9,258	996	10.75	8,991	11.77
Average annual	3,086	332		2,997	
1880-81	3,985	412	10.30	3,882	10.61
1881-82	4,571	395	8.64	4,466	8.84
1882-83	4,215	445	10.56	4,051	10.98
1883-84	4,091	413	10.07	3,958	10.46
1884-85	3,824	338	8.84	3,657	9.24
Total 5 years	20,686	2,002	9.68	19,994	10.01
Average annual	4,137.2	400.4		3,998.8	
1885-86	4,043	374	9.25	3,812	9.81
1886-87	3,855	352	9.18	3,620	9.72
1887-88	4,142	386	9.32	3,815	10.11
1888-89	4,543	375	8.25	4,263	8.79
1889-90	4,853	391	8.06	4,492	8.70
Total 5 years	21,416	1,878	8.77	20,002	9.38
Average annual	4,283.2	375.6		4,000.4	

These statistics, taken as they are from a most reliable source, show that the homeopaths are not holding the ground gained in the profession of this country.[3] Taking the census of the United States in 1880 and 1890, and that of Canada in 1881 and 1891, as a basis of computation, we find that for every average annual graduate in 1880, there was a population of 17,709.3; and in 1890 a population of 15,809.4. This shows that there is an increase in the total number of graduates, compared with the population. In 1880, for every average annual graduate in homeopathy, there was a population of 164,430.5. In 1890 the proportion of annual homeopathic graduates had decreased to one in 180,284.8 population. In the United States alone the figures are as follows: In 1880, one graduate in medicine in 16,772.1 population; in 1890, one graduate to 15,719.8 population; homeopathic graduates, in 1880, one to 151,403.9 population, and in 1890, one to 167,426.9 population.

The above figures are here given, because the homeopathic sect have repeatedly claimed that the facts are quite different, and their positive assertions, though unsupported by evidence, have sometimes seemed to have considerable influence in proselyting.

Out of 118 nominal homeopathic practitioners in Austria, only forty-four practice that system exclusively. In the United States prominent members of the homeopathic societies have recently affirmed that there are practically *no* homeopathic physicians in this country. Though a majority of them regard as visionary most of the teachings of Hahnemann, there are still a large number of physicians claiming to treat disease according to the dogma, *similia similibus curantur*.

The great number of believers in the teachings of Mohammed does not prove the truth of those teachings, but it does furnish a reason for examining the evidence of his claims. Thus the proportion of homeopathic physicians does not prove their right to exist as an independent sect, but it challenges investigation.

It must be remembered that there is a vast difference between rational medicine and homeopathy. The one is a science; the other a system. As the pine, beginning in the little germ, gradually increases in size until it becomes the tall and stately tree, so the science of medicine is not the product of any one man or age. Hahnemann, alone, presented to the world homeopathy, as an artist produces a statue. Others may have polished off some of the minor imperfections, but the system is essentially the same that it was when it was first originated. The sculptor, failing to grasp the artist's idea, sometimes in trying to perfect the statue removes too much, and materially modifies the ideal of the master. In art, to comprehend the master's thought, we study his models and pencil sketches, as well as the finished work. In order to fully understand modern homeopathy, we may best begin by studying the system as first proposed by its author, although fully recognizing that the homeopathy of to-day is not the same that it was sixty years ago, in many of the less important details.

The Organon[4] is considered Hahnemann's greatest work. It is practically the only book, written by him, which is now read by the general practitioner. In this treatise, he devotes much space to decrying medicine as he supposed it to be generally practiced. He said: "They fancied they could find the cause of disease, but they did not find it, because it is unrecognizable, and not to be found;"[5] and yet the causes of many of the zymotic diseases have since been seen and handled. He ridiculed the study of pathologic anatomy—the examination of dead bodies, saying: "That is, they will not cease for the sake of those foolish and groundless hypotheses, to be *immaterial* modifications of our sensorial condition."[6] This statement agrees closely with the teaching of so-called Christian science of to-day. On the other hand, very much of our present knowledge of the diseases of the brain, for example, are the direct result of the examination of dead persons; and the information thus gained, which could only have been gained in this manner, has enabled the surgeon to unerringly open an apparently healthy skull, and remove a small tumor, or empty an abscess, thus saving the life of the patient, or relieving him of terrible tortures. For acute dyspepsia, with cold extremities, dull head, and eructations of tainted food, Hahnemann advised that the patient *smell once* of a granule of sugar, not larger than a grain of mustard seed, moistened with the *highly diluted* juice of pulsatilla.[7] He did not even sanction the administration of vermifuge remedies for intestinal worms. He declared that so long as the patient was healthy, the worms would cause no trouble;[8] and distinctly advised that only the

[3] During the period, 1877 to 1890, inclusive, there graduated in America, 51,360 physicians. Of these, 4,876 were homeopaths; 2,886 were eclectics; 272 were physio-medicals; 55 belonged to other irregular sects; and 43,271 graduates from "regular" colleges.

[4] All quotations from Organon here given, are taken from the translations made by Wesselhoeft, from the fifth edition of the original.

[5] Organon, p. 18.

[6] Organon, p. 20.

[7] Organon, p. 48, Note 6.

[8] Organon, p. 52, Note 14.

general symptoms be treated. It is well known, however, that the most serious trouble, even death, has been produced by these intestinal parasites.

Although Hahnemann ridiculed pathologic study, and the searching for a cause, he most positively stated, as though by divine revelation, that all chronic diseases originate from syphilis, sycosis, or the itch. "Psora (the itch) is the only real fundamental cause and source of all the other forms of disease figuring as peculiar and definite diseases in books of pathology, under the names of nervous debility, hysteria, hypochondriasis, mania, melancholy, idiocy, madness, epilepsy, and convulsions of all kinds, softening of bones, cancer, gout, hemorrhoids, dropsy, asthma, deafness, sick headache, cataract and glaucoma, renal calculus, paralysis," etc.[9] He, therefore, frequently urges the importance of antipsoric treatment. It is now well known that the itch is the product of an insect, and that it has nothing to do with the diseases mentioned.

Since Hahnemann's pathology is dogmatic, and not at all scientific, any treatment founded on his pathology must, therefore, be empirical, not rational. His general statement, *similia similibus curantur*, is also pure empiricism. In fact, this is admitted by Dr. C. Wesselhoeft in the introduction to his edition of the Organon, where he says: "We accept it as an empirical fact, not as a theory, or hypothesis, as our opponents quite erroneously term it. The explanations of its workings are as numerous and varied, as they are unsatisfactory, from Hahnemann to the latest expounder."[10] In support of this "empirical fact," we find the oft repeated statement: "In all ages those sufferers who were really cured rapidly, permanently and visibly through medicine, were cured alone by a remedy possessing the power of producing by itself a similar morbid condition."[11] Hughes says: "All treatment by single medicines used for their direct effects upon the disease is truly of this kind, though it knows or acknowledges it not."[12] These statements, though often repeated, are both contrary to reason and contrary to fact. In refutation of their affirmations, we need only to point to the experience and observation of scientific physicians generally. They are not so false as to cling to what experience has taught them to be error, especially since it is not in the least to their advantage to continue in their false position. That the profession generally is not averse to accepting new ideas, and that it is ever ready to investigate every claim, is apparent to every thoughtful person. Witness the studies of Pasteur and Koch, of Vaughan and Sternberg, and the zeal with which Lister's surgical dressings were adopted. If Hughes said truly, what possible reason could be given to explain the attitude of the general profession towards homeopathy? Are men alive to facts generally, and yet unable to see a fact which should be constantly before them, if the homeopathic statements are true? Or in what possible way can it be for the advantage of physicians generally to conceal this fact, if it be a fact? Can ergot produce diabetes? In many cases the use of ergot alone cures the patient. Digitalin is curative in some forms of heart disease, in which the homeopathic law does not at all explain its usefulness. Such illustrations might be given by the page, but *one* is sufficient to prove the statement of Hughes false.

Hahnemann's method of preparing fresh plants is as follows: Express the juice and to it add an equal quantity of alcohol. This mixture is called the "mother tincture." Taking two drops of this tincture, add 98 drops of alcohol and shake twice, to make the first dilution. Put one drop of the first dilution into 99 drops of alcohol, and shake twice, to make the second dilution. Repeat this latter process, taking one drop of each dilution to form the next higher, until the thirtieth is reached.[13] By a similar process, triturations are made by the addition of sugar of milk in the place of alcohol, rubbing instead of shaking the mixture. Triturations are especially used in preparing materials which are insoluble in water or alcohol. Mercury, or quicksilver is of this nature. After making one or two triturations, sometimes the process is continued in dilutions. In such cases the solution contains none of the originally insoluble drug, unless a chemic change has taken place in the trituration. The writer has several times examined low dilutions of mercurius vivus, prepared by one of the most reliable homeopathic drug firms in the country, without finding the *slightest trace* of mercury. If the dilution should have been made from an old trituration, it is possible that with some substances a soluble oxid might have been formed by the decomposition of the sugar of milk. Even this action is impossible in preparations of metallic mercury.

A row of thirty phials containing these dilutions, or triturations, gives no idea of the credulity necessary for the use of the thirtieth dilution. Prepared according to Hahnemann's directions, two drops of the juice of a plant would be sufficient to make in the *sixteenth* dilution a quantity *larger than this earth*. In spite of this fact, *the most pronounced symptoms* have been asserted as the result of the use of the *thirtieth* dilution. Salt (sodium chlorid) is a common article of diet. Almost everything we eat contains salt. Remembering this, and the small amount of salt in the higher dilutions, consider the testimony of one of the recent writers, whose work is used as a text-book in the homeopathic schools. He says: "And let me say here, that salt will cure more cases of intermittent fever, both acute and chronic, than any other known remedy. *With the thirtieth dilution I have cured several hundred cases, with this drug alone.*"[14] (Italics ours.)

To the thoughtful person, such propositions appear so thoroughly absurd, as not to deserve even a passing notice. Burt practically says in the above quoted statement, that salt, taken in the food has very little or no effect; but when an infinitesimal quantity is given as medicine, it has a powerful medicinal effect. So, too, carbo vegetabilis—charcoal—which one constantly takes in food, without any apparent effect; yet one grain of which, according to Hahnemann's plan, if finely powdered, and cast into the head-waters of the Mississippi River, is more than enough to render powerfully medicinal the water of the Atlantic Ocean.

While the vast majority of those calling themselves homeopathists agree with Hughes, when he says: "To make the Hahnemann of 1830 to 1843 our guide, is,

[9] Organon, Sec. 80, p. 110.
[10] Organon, p. 11.
[11] Organon, p. 43.
[12] Manual of Pharmaco-Dynamics, London, 1880, p. 9. See also Wesselhoeft's address before the Boyleston Medical Society, p. 15.
[13] Organon, Sec. 270, p. 178.
[14] Burt's Physiological Materia Medica, p. 632.

I think, to commit ourselves to his senility,"[15] yet we must not forget that there still exists a set in this sect, who not only indorse Hahnemann in the use of high potencies, but they go beyond him, using not only centesimals, but also millesimals. One of these high potentists recently told the writer that though in its crude state lycopodium is inert, yet in the *thousandth dilution* it is a powerful drug.

In this country the high potentists have organized themselves into societies. They have under their control hospitals, and recently in Chicago they have established a new college, the students of which are not only to use the high dilutions, but to depend upon the internal administration of drugs, to the exclusion of all local or mechanical treatment.

It may be proper to ask: Is alcohol relatively so weak in its physiologic effect, that a drop of aconite in a hogshead of alcohol will still give, when administered, the effect of the aconite alone? Has charcoal, (or carbo veg., as they call it) which is an impure form of carbon, such a powerful medicinal effect upon the human system, as is asserted; and yet has sugar of milk, which contains carbon, so little influence that it can safely be entirely disregarded in prescribing triturations?

Treatment with these high dilutions may, perhaps, well be called materialistic faith cure. It differs from ordinary faith cure in using an external object as an aid to faith. It is well known among physicians that faith is a great aid in the treatment of disease. Almost every practitioner has seen cases in which faith has reduced inflammation, or the lack of it has materially increased the trouble. Acute diseases are generally, by nature, self-limited, and if the strength of the patient holds out the patient recovers, even if no medicine be given. The fact that many cases do recover without medicinal treatment is no indication that all cases would get well either more quickly or more perfectly without treatment.

Suppose one of these ultra, or refined, homeopathists should be called to a case of poisoning from the swallowing of strychnia, arsenic or belladonna berries! If he knew the cause of the sickness, he would probably first give an emetic, and then an antidote. Such treatment is not homeopathic. In the case of acute dyspepsia above cited from Hahnemann, there is a poison produced in the stomach. Why is an emetic allowable in one case, and not in the other?

Sometimes the bowel becomes so twisted as to cause intense pain, and often death within twenty-four hours. In such cases, opium or other narcotics may relieve the pain, but as a rule, medicines alone are powerless to cure. It not seldom happens that the fatal result comes before the character of the case is fully recognized. Such cases as these most need the doctor's energetic care, but the refined homeopathy can offer no relief. Under its useless watching much valuable time would be lost, and the death of the patient be thereby practically insured. Though these high potentists are probably far less dangerous than the polypharmacal leeches of a century ago, yet it is well for humanity that there are as few of them as there are.

Before discussing further the homeopathy of to-day, it may be well, by way of contrast, to state the general rules governing the scientific practice of medicine.

When called to a patient it is the first duty of the physician to determine wherein, and to what extent, his physical condition deviates from the normal standard.

2. He should, if possible, determine the cause of the disease and check its operation. A recent writer has well said: "He is the best practitioner who has the keenest scent for unfavorable surroundings and hurtful habits,—who is most thorough in his supervision of work and rest, of open air exercise, clothing, diet and sleep, of sloth and strain, and manner of living."[16]

3. He should use such means as are best calculated to restore the health of the patient. This includes the sustaining of strength, and the neutralizing of dangerous symptoms. In the selection of remedies he should be untrammelled by any dogma or prejudice. He should be free to use mineral as well as vegetable remedies, in large as well as small doses as he deems them indicated. Baths, electricity and massage are equally at his disposal with drugs. Not so the homeopath. Hahnemann condemned external treatment. Homeopathy, "the only law of cure," entirely disregards all other means of treatment besides internal medication according to the dogma of *similia*. A man who advertises himself as a homeopath is in duty bound to strictly adhere to homeopathic laws. He obtains his patrons as a homeopath, and whenever he deviates from pure homeopathic practice, unless he plainly calls the attention of his patrons to the fact, he is really sailing under false colors, and obtaining money under false pretenses.

The common defense made by members of the sect, for violating the so-called law is: "The allopaths use our remedies." Though Hahnemann to contradistinguish his followers called the regular practitioners, "allopaths," this title has never been accepted by any body of men for themselves. So far as it means anything, it gives a false impression. It is generally regarded as an insult by those to whom it is applied. The scientific physician of to-day relatively seldom uses what could be called properly an "allopathic remedy." He avoids all sectarian designations; he limits himself to no particular method. There is no school of astronomy, chemistry, engineering, or other science, and the scientific physician denies the real-existence of a school of medicine.

The fact that a scientific physician uses homeopathic preparations, would be no excuse for a homeopathic practitioner's violation of the *similia* rule, even if the scientific physician had taken an oath not to practice homeopathy. Though both use the same remedy in the same kind of a case sometimes, the homeopath uses it empirically, while the scientist has a reason for his practice. For example: A person of nervous temperament may, as the result of some atmospheric change or other slight irritation be thrown into a high fever, with full bounding pulse, congested conjunctivæ, flushed face, headache and coated tongue. Both physicians may use aconite; but whereas the homeopath uses it without any reason, blindly following the imaginary rule of *similia*, selecting the aconite because it accidentally produces similar symptoms in a healthy person, the scientist selects aconite because of its sedative effect upon the nervous system, especially upon the sensory nerves, and because of its quieting influence upon the circulation of the blood. Large doses of ipecac produce vomiting; small doses are frequently given

[15] Opus cit. p. 91.

[16] Dickenson, In Hare's System of Practice, Vol. III, p. 730.

to allay vomiting. If the vomiting is the result of over-sensitive nerves, the ipecac will be of little benefit. When, however, there is a catarrhal condition of the stomach and bowels, small doses of ipecac, by stimulating the secretion from the mucous membrane, making it less viscid, and by increasing the secretion of bile, promote digestion, and thus relieve the nausea of indigestion.

Modern homeopathy has for its chief characteristics:

1. A belief in the dogma, *similia similibus curantur*.
2. Use of single remedies.
3. Use of the smallest quantity of drugs sufficient to produce the desired result.
4. To a greater or less extent, dependence upon internal medication to the exclusion of all local or non-medicinal constitutional treatment.

Except the first, none of these characteristics are peculiar to homeopathy. In the third and fourth, there is more difference between those claiming to be homeopathists, than there is between the ordinary homeopath and his scientific neighbor. Many use electricity freely, and most of them use local medication, baths and massage to a greater or less extent, although all are foreign to pure homeopathy. So, too, some claim that high potencies should be used, while their more rational brethren scoff at the idea, and prescribe as large doses as their "regular" neighbors.[17]

The use of single drugs necessitates greater care in their selection. This stimulates the practitioner to study more closely the indications for particular drugs. Among homeopathic doctors this study is purely empirical. The scientific man studies rather the exact action of the drug, not the gross symptoms. In proportion as drugs are mixed, there is a tendency toward carelessness in their selection. Often more is given than is needed, and from this cause or because of poor selection, other remedies must be added, to counteract the undesired results. The patient, therefore, has to contend with drug poisoning, as well as disease. With simple medication and minimum doses, clearly there is the greatest chance for the *vis medicatrix naturæ*. Medicines may help, but they can not alone cure the patient. It is the healing power of nature upon which we must ultimately depend. Although simple medication is, therefore, greatly to be desired, and it is in harmony with the most scientific treatment, yet it sometimes occurs that mixtures increase the efficiency of the remedies, or render them more convenient to take. It must be noted that while theoretically teaching simple medication, a majority of homeopathic physicians practice polypharmacy, by alternating remedies.

Against mixed drugs, it has been claimed that the mixture changes the character of the medicines, so as to make the results uncertain. For example: If nearly equal parts of gum camphor and carbolic acid crystals are ground together, in the place of the solids we have a fluid. Although a 10 per cent. solution of carbolic acid generally has a decidedly escharotic effect, this mixture containing 50 per cent. of the acid has but slight escharotic effect. Such results are relatively rare. They must always be borne in mind by the prescriber, but the example given shows the advantage sometimes found in mixtures, for the carbolized camphor is a more active germicide than either drug would be alone, when used in safe quantities.

Diseases differ greatly in their nature and causes, and the kind of treatment must also vary. They may originate from general, or from local causes. Very many nervous disorders originate from local irritation. Reason dictates that in such cases the treatment should be local. In them, general treatment can be but palliative. Hahnemann, however, recommended that only constitutional treatment be used. In a case of partial paralysis of one leg, the writer recommended circumcision, on the hypothesis that the irritation from phimosis produced the change in the spinal cord. At the same time, homeopathic practitioners of good reputation scoffed at the idea, and insisted upon constitutional treatment. Their advice was followed without benefit. Then circumcision was performed without constitutional treatment and the patient recovered and remained well. Convulsions or epilepsy from a similar cause may be held in check by drugs, so long as the drugs are taken. A slight operation would produce a permanent cure, but unfortunately the doctor's receipts would be diminished. Such examples are so very common as to clearly demonstrate to any impartial person the utter fallacy of Hahnemann's objection to local or non-medical treatment.

Acceptance of the dogma, *similia similibus curantur*, is the *real* characteristic of the homeopathic sect. This phrase, similars are cured by similars, is a positive statement. It either tells the truth or a falsehood. There are three possible legitimate excuses for a dogmatic statement. The fact may be axiomatic, one which is self-evident to all. *Similia similibus curantur* is not axiomatic. Truths are sometimes revealed by God to man. Possibly Hahnemann was inspired, but if so, we should hardly have expected to find so much nonsense in his books as it is generally admitted that they contain. Lastly, a statement may be made which is capable of proof. Can the statement, *similia similibus curantur* be proven?

It has been claimed that as an empirical fact, it has been shown that homeopathic physicians are more successful than others in the treatment of disease. In proof of this assertion, statistics are produced. These statistics are so thoroughly admixed with error, however, that they are of little or no value.

1. There is a vast difference between treatment by a nominally homeopathic doctor, and homeopathic treatment. It has not been shown that the cases claimed have really been treated homeopathically. Burt[18] recommends common salt for intermittent fever. Salt does not produce symptoms like those of intermittent fever. It does not produce the regular periodic chill, recurring at a certain time every day, or every second or third day. By mental suggestion in a susceptible person almost any symptom may be produced; but if the person experimented upon does not know what symptoms are desired, the recurring chill and fever will not appear.

2. It is well known that a century ago, often more harm than good resulted from the administration of drugs. Some years since, out of eighty cases of cholera upon a certain ship, forty-three were treated with drugs, with a mortality of seventeen, or 40 per

[17] It must be remembered that in many cases, being made from fresh, or green drugs, the homeopathic tincture is much stronger than the officinal tincture of the same drug. Also, since fine division favors absorption, triturations are sometimes more efficient than the crude drug.

[18] Loco cit.

cent., while from thirty-seven receiving no medicine only one died. So compared with the old practice, it may well be believed that homeopathy as practiced would be very successful, not because of positive value, but because it did no harm. The medicines used had little or no effect.

3. In the statistics given, hygienic conditions have been ignored.

4. Exact diagnosis has not been assured. As a matter of fact, physicians who depend only on general symptoms, ignoring the aid of the microscope, and other instruments of precision, are quite likely to make errors of diagnosis. In one instance, three scientific physicians had an epidemic of about 160 cases of rötheln, a mild disease which resembles scarlet fever, though distinct from it, and one which is seldom or never fatal. They saw no cases of scarlatina. At the same time, two other doctors in the same locality reported about 140 cases of scarlatina, none of whom proved fatal. Clearly, statistics based upon that series of 140 cases of scarlatina would be of doubtful value.

5. In statistics given, homeopathic practice of to-day is contrasted with the common results of fifty years ago.

How can medicine cure when used according to this dogma? Jousset, in *L'Art Medical*, affirms that:

"1. Every medicine produces on the healthy body two successive actions, primary and secondary. These two actions are always opposite one to another.

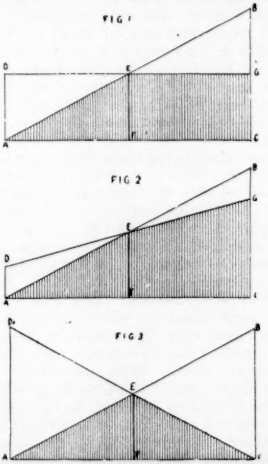
"2. The stronger the dose of the medicine, the less marked is the primary action. If the dose is excessive, the secondary action only is developed.

"3. The weaker the dose, the more manifest the primary action."[19]

Another way of putting almost the same idea, is that every drug has a certain effect upon the system. There is in life a tendency to react against external agents and thus retain health. We have, therefore, the action of the drug, and the reaction of the system, which are opposite the one to the other. With small doses the reaction is the more apparent, and with large doses the action is the more noticeable. Since homeopathic writers differ greatly in the use of the terms, primary and secondary, we shall speak only of the action and reaction.

If it is granted that we get opposite results from the administration of large and small doses, it must be admitted that a drug which in a large dose produces the most similar symptoms to the disease treated, would in small doses be the most exact neutralizer of the disease. The curative action in this case would be antipathic, as Dr. Dyse Brown of England has affirmed, not homeopathic. Dr. E. M. Hale, however, in his "New Remedies," says: "If the primary symptoms of a disease are present, and we are combating them with a remedy whose primary symptoms correspond, we make the dose the smallest compatible with reason," etc. He, therefore, would indorse strict homeopathic treatment. The wide and radical difference found among homeopaths in the interpretation of the dogma of *similia* can but weaken the confidence of the student in its value.

If it is true that every drug produces opposite results in large and small doses, it must follow that there is an intermediate point, at which its effect would be nothing. No such neutral point has ever been demonstrated. Granting that these opposite results arise from the action of the drug, and the reaction of the system, the relative results may be illustrated graphically. (The same is true using the idea of primary and secondary action.) The real *action* increases with the size of the dose. It may be represented by the triangle ABC, in Figs. 1, 2 and 3. If the *real reaction* is always the same in quantity, it may be represented by the parallelogram ADGC in Fig. 1. If the *real reaction* increases with the size of the dose, the quadrilateral ADGC, in Fig. 2, illustrates that; or if the *real reaction* decreases with the increase of dose, that is shown by the triangle ADC, in Fig. 3. In all the figures, the distance from A on the line AC shows the size of the dose. It will be noticed that at F there is no *apparent action* or *reaction*, for the one neutralizes the other. In all the figures, the triangle AED represents the apparent reaction; and BEG, (or BEC in Fig. 3,) shows the *apparent action;* and the shaded portion, AEGC in Figs. 1 and 2, and AEC in Fig. 3, shows the portion



of the action which is neutralized by the reaction, and hence is non-apparent. From these illustrations it is evident, that if from the neutral point the dose be increased, the *apparent action* will also be increased; and from the same point the more the size of the dose is decreased, the greater will be the *apparent reaction*. In other words, if the dose is decreased to an infinitesimal, the *apparent reaction* will be the greatest. If this be so, Hahnemann and the high potentists are correct. An infinitesimal is practically equal to zero. According to this reasoning, therefore, if *no* medicine be given, the *apparent* reaction will be the greatest. This is absurd.

One thing is similar to another, just in proportion as it resembles the other. The most exact similar is, of course, identical. It is well known that at least a large proportion of diseases are the result of some form of poisoning. Strict homeopathy would demand that in such diseases the same poison be used in the treatment of the case, as that from which the patient might be suffering. This is so manifestly absurd that very few would think of indorsing it, though an

[19] Hughes' Manual, p. 67.

attempt has been made to establish such a system of treatment. That the homeopaths do not generally indorse this method, may be seen from incidental remarks in their books. Hughes[20] mentions a case in which the doctor was about to prescribe *apis mel*, the poison of the honey bee, but changed his mind because he found that the patient had been stung by a hornet. He, therefore, gave a vegetable remedy.

In the foregoing, it has been taken for granted that opposite results are obtained from the administration of large and small doses. Is it true that we do obtain such results? Our geometrical demonstrations show that we can not. Jousset and others claim that we both can and do obtain such opposite results; but after a careful study of the subject, the writer must say that though there are numerous instances of such *apparent* opposite results, he does *not know of a single instance of such real opposite action of large and small doses.* To illustrate:

A small dose of alcohol apparently strengthens the muscles, and stimulates the brain. A large dose paralyzes and stupefies. A closer study shows, however, that after taking a small dose of whisky, the person lifts more, or uses his mind with less fatigue, not because of additional strength, but because the sensory nerves are so benumbed that he does not realize when he approaches the limit of his strength. A larger dose carries the benumbing effect over to the motor system and the intellect.

Again: Convulsions are produced by strychnia, but a larger dose causes paralysis. It is, however, clearly proven that the convulsions are produced by stimulating the spinal cord, making it more sensitive to external impressions. The paralysis is produced by the *direct effect* of the drug upon the *motor nerve*, and sometimes when convulsions have occurred, by exhaustion of the motor nerve. The action is always the same on each part of the body, whether the dose be large or small, but the apparent results may vary with the degree of involvement of different organs of the body.

Another class of drugs presenting apparently opposite results sometimes, is illustrated by digitalis. In the smaller doses it generally strengthens the action of the heart, but in larger quantities it may paralyze that organ. It is found, however, that digitalis contains among its active principles three whose action is always to strengthen the heart, either directly or indirectly. It also contains another principle called digitoxin, which weakens the heart muscle directly, and in large quantities it paralyzes that muscle. In the smaller doses the poisonous effect of the digitoxin is practically insoluble in alcohol. Consequently, we seldom or never get the heart paralysis from the tincture of digitalis; but when sufficient of the powdered drug, or especially, of the infusion is given, the direct weakening effect of the digitoxin more than counterbalances the good results of the tonic principles. In other words, the contrary actions are not found here in a simple drug, but in a mixture of dissimilar agents.

It is one of the principles of homeopathy to use only simple drugs, and yet they freely use such drugs as nux vomica, veratrum and digitalis, which are not simple, but each of which contain two or more dissimilar active principles. In the use of these, therefore, they are not consistent.

[20] Opus cit., under head of *Apis mel.*

It is somewhat remarkable, considering the fact that the sect has centered its attention upon the action of drugs, that their text-books are silent upon the *exact* action of such drugs as digitalis, nux vomica, ergot and belladonna upon the nervous system and the circulatory organs, except as they may quote from some standard work like that of H. C. Wood or Bartholow. They usually ignore the existence of active principles, and discuss only the crude drug. They are largely filled with general statements and subjective symptoms. Hahnemann's Materia Medica Pura gives 638 symptoms for arnica, and later writers have nearly if not quite doubled that number. The symptoms given include even the character of thought, and other purely accidental observations. Illustrative of this fact are the following quotations, taken from Burt's Materia Medica, a standard homeopathic text-book. They are not rare examples, but they may be easily duplicated from almost any homeopathic work on the subject. As provings of common table *salt*, he gives: "Extreme despondency; melancholy; depressed and weeping; consolation aggravates; prefers to be alone; dreams of robbers, so vivid that house must be searched." Under pulsatilla we find: "Timid and fearful, mild, gentle, yielding; weeps easily; she weeps at every nursing; does not want to go to bed." Under rhus: "Satiety of life, with fear of death; wants to go from bed to bed." It may be positively stated that not one of the above symptoms was the result of taking the drug mentioned, but all were merely accidental concurrences.

Such provings as those just given are regarded by most homeopathic practitioners as mere curiosities of homeopathic history. They strongly object to having such records taken as indicative of their common sense or professional knowledge. On the other hand, the high potentists still accept these provings.

A careful study of the homeopathic works on materia medica shows that in place of telling the action of a drug they devote the space to a discussion of the indications for its use: "Or symptoms *ex usu in morbis* have been introduced, and the names of diseases supposed to have been cured by the drug are incorporated with the pure symptoms."[21] Homeopathy, therefore, is pure empiricism. Its followers take the dogma, *similia similibus curantur*, as "an empirical fact," and they follow their leaders in the empirical use of drugs, making little attempt to explain their action. They make themselves as nearly like machines as possible, mechanically comparing the symptoms with their lists of provings.

Wesselhoeft says of homeopathy: "It means in regard to disease, we should make clinical use of only such facts, characteristics or symptoms, as we can with our aided or unaided senses grasp or accept as facts, without doubt or cavil."[22] What sense, aided or unaided, can without doubt grasp the dogma, *similia similibus curantur?*

The nearest approach to homeopathy, in the medical science of to day, is found in inoculation, as with the vaccine virus. This is not to cure disease, but to prevent it, or more correctly to make it less severe. In the place of poisons, disease germs having life are implanted in the system. It is known with regard

[21] Carroll Dunham, in Homeopathy, the Science of Therapeutics, p. 42.
[22] Boyleston Address, p. 10.

to tetanus (lockjaw), diphtheria, and some other diseases, that when these organisms are introduced into the system, a chemic substance is produced which kills the germs, and neutralizes their poisonous products. This substance is called an antitoxin. The existence of sufficient of the antitoxin of any disease in the system, makes it impossible for the bacilli of that disease to develop in the system. A less quantity of antitoxin hinders their development, and renders the disease more mild. The antitoxin not only prevents the disease, but if it is introduced into a person sick with the disease it shortens its course and renders the disease less virulent. The antitoxin is the preventive and curative agent, and its effect is never like that of the poison of the disease. Even here, then, the so-called law, *similia similibus curantur*, is not operative.

It is a remarkable fact that though this sect has been in existence a hundred years, it has made no contributions to science. It has, perhaps, added a few drugs to the Pharmacopœia, but its disciples have never published a single discovery in anatomy, histology or pathology.[23] During the same time, almost everything that is now known relative to the nervous system, for example, has been discovered. Even in the last score of years the most important discoveries have been made in the relation of bacteria to disease, and in what may be called pathologic chemistry.

Members of the homeopathic sect frequently seek to excite opposition against the scientific physician by calling him "old school." They imply and often affirm that the regular practice of to-day is practically the same that it was 2,500 years ago. The fact is that during the last century, homeopathy has made no essential progress, but scientific medicine has shown such continual change and rapid development, that it has almost nothing in common with the science of 1800. Homeopathy has, perhaps, lopped off some of its eccentricities, but it has added practically nothing to our knowledge of disease and the curative properties of drugs, and it has made little attempt to keep up with the recent discoveries. If we grant the existence of schools of medicine, the term "old school" must, therefore, be applied to the homeopathic sect, rather than to rational medicine.

It has been said, that if rational medicine is changing so rapidly, it can not properly be called a a science. During this century, much has been learned in chemistry, and with advancing knowledge, theories have been reconstructed. A perfect science we nowhere have. Although we do reconstruct our chemic theories, chemistry is a science. So is astronomy, though it is too much to believe that we know all in astronomy that it is possible to learn. Medicine is a science, and it is fast approaching a perfect state, though it will not attain that point for many years.

It has now been clearly demonstrated that the symptoms of Asiatic cholera are the result of poisoning with the ptomaine produced by a certain bacillus. Rational treatment, therefore, demands either the destruction or the neutralization of the bacillus and its product. Homeopathy, however, continues to treat purely according to general symptoms. An attempt has been made to show that the former homeopathic treatment is scientific, because in some instances the remedy used proved to be germicidal for that particular disease in which it was prescribed.[24] It must be remembered that such evidence only proves that the particular remedy studied owes its efficiency, perhaps, to its germicidal property, and falls far short of demonstrating the scientific value of homeopathy.

To the strict homeopathist, looking only at the totality of symptoms, there is little necessity for a differential diagnosis between paralysis resulting from cerebral congestion, a tumor, spinal disease, or apoplexy. For the scientific practitioner this distinction is of the greatest importance, and often the life of the patient depends upon its correct determination.

While bacteriology, chemistry and histology are taught in homeopathic colleges, they have no part in the ordinary homeopathic practice and are, therefore, too much neglected. The homeopathist has little use for the microscope, but for the scientific physician it is a necessity.

If it is true, as we have tried to show, that there is no such thing in reality as opposite results with large and small doses; and if it is true that there is no genuine homeopathic practice, how has the sect thrived in the past as it has?

"Nothing succeeds like success," is an old saw. The fact that homeopathy has thrived in the past, in spite of opposition, is for many a reason for trusting it without investigation. Though influential to increase clientage, it is no proof of its value. The oily-tongued quack, absolutely without moral principle, and with the merest smattering of medical lore, can always get testimonials from all sorts of people. The very blackest of them secure the strongest recommendations from honored clergymen.[25]

The homeopaths have constantly traded upon the name of their sect, printing it upon their cards, billheads and door-plates. They have sought to make people believe that nauseating mixtures, polypharmacy, and drug poisoning were essential parts of the regular practice, though, in fact, such treatment is as thoroughly condemned by the scientific doctor of to-day as by the homeopaths. Though the practice of the modern homeopath differs but little in reality from that of his scientific neighbor, the homeopaths erect an artful barrier, exclude themselves from the society of the general profession, and then pose as martyrs. Homeopathic practitioners, who honestly admit that they do not regard *similia similibus curantur* as "the only law of cure," who practically use the law only in the absence of more scientific treatment in the less common diseases, still persistently refuse to join regular societies, when the only thing demanded of them is, not that they shall change their practice, nor their honest convictions, but that they shall drop the designation "homeopathic."

Some years ago, when the homeopaths were trying to get a homeopathic department in the University of Michigan, it was stated that about one-half the practitioners of the State were homeopaths. At that time there was no way to prove the falseness of the statement. In 1883 a law was passed requiring all physicians in the State to register. Out of 3,400

[23] The above statement relative to homeopathic work in science, has been frequently made, and so far as the writer has been able to find, never denied.

[24] See article by A. F. More, in the New England Medical Gazette, February, 1892, p. 66.

[25] One of the greatest obstacles to the elevation of the standard of the medical profession to-day, is found in the attitude of the clergy. Knowing nothing practically of medicine, they are constantly indorsing orally, and in public print, quacks and patent medicines.

who complied, 510, or 15 per cent. were homeopaths, of whom only 382 claimed to have graduated from any medical school. A recent writer made the assertion that in the State of Illinois, "three-fourths of the most intelligent class of citizens" are homeopathic patrons.[26] Though this statement is without the slightest foundation, the fact that it was printed publicly, in a reliable newspaper, or one generally so considered, is sufficient reason for many to take it as "gospel truth," and to act accordingly.

The average homeopath regards refined homeopathy as a form of fanaticism. The pharmacist who sells bottled sunshine, and other chimerical remedies, he considers as either mentally or morally insane. He uses antidotes for poisons, and freely resorts to surgical and other mechanical means of treatment. He frankly admits that according to the more recent discoveries in science, many if not most diseases are the result of poisoning, and that analogy demands that these cases be treated—not homeopathically—but by antidotes. Many further claim that with advancing knowledge, the true scope for the use of homeopathy is decreasing. They are reserving it for only the doubtful cases. They no longer take it as the "only law of cure." In other words, there is little to distinguish the practice of the liberal homeopath from that of the ordinary practitioner.

On the hand, the high potentists claim that they themselves are the only true homeopathists. Though they are but a handful in the sect, and though they, too, have discarded Hahnemann's pathology, and his teaching relative to potentialization by succussions, the impartial student must admit that their claim is apparently well founded.

It is sometimes claimed by homeopaths, that mechanical treatment, electricity, antidotes, et cetera, which they use, do not cure, but only prepare the patient to be cured. If it were added that nature cures the disease, the statement would be correct; but that is not their meaning. They claim that the cases are cured after such a preparation by homeopathic drugs. Their claim is exactly on a par with that of the cancer quack, who removes the cancer *without pain* (after having made the patient endure untold agonies, while caustics slowly burn out the disease). The cancer quack simply lifts out the slough remaining after his inhuman treatment is over.

It is proper here to refer to another charge, which is frequently made by homeopaths against the regular profession. They say that medicines are frequently adopted from the homeopathic school, without giving it any credit for bringing the same to notice. That is mentioned as an injustice. The fact is that the profession gives individuals credit for any investigations of merit, but it recognizes no school, and hence never gives any *school* credit for anything. Further, the standard works on materia medica seldom mention the names of those bringing a drug into prominence. There is, therefore, no injustice done the homeopaths, singly or collectively, in the matter, and any attempt to stir up sympathy on this score is out of place. With reference to this charge, an article headed "Who does the Stealing?" in Vol. I of this JOURNAL, page 434 (1883), receives additional interest from the tragic death of the writer, the late Dr. P. H. Cronin, of Chicago.

It has been claimed that homeopathy is scientific because it alone recognizes a single law of cure. Carroll Dunham objects to regular medicine as unscientific because "hence, a new science must be formed for every new type."[27] It is surprising that such a man should confuse *law* and *science*. There are many laws in physics besides that of gravitation. The existence of magnetism does not prove that gravitation does not exist, although they may oppose each other. There is no science within the writer's knowledge, which recognizes a *single* law. Is it not too much to expect, therefore, that the supposed law of similars is universal? If it is not universal in its application, it can only be recognized in the science of medicine when its limitations are recognized.

In conclusion: Since there is nothing of value which is peculiar to homeopathy; since the dogma upon which homeopathy is founded is contrary to reason and contrary to fact; and since a large portion of the sect no longer bind themselves closely by the dogma in practice, but hang on to the designation apparently for advertising purposes, the existence of the *sect* is not conducive of advancement in the science of medicine, and its further life as a sect should be in every way discouraged in all intelligent communities.

[26] Com. to Chicago Inter Ocean, Nov. 25, 1892, p. 19, col. 2.

[27] Homeopathy, the Science of Therapeutics, p. 19.

THE MEDICAL EXPERT WITNESS.

Read before the McLean County Medical Society, Bloomington, Ill., Feb. 5, 1894.

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The field of medical jurisprudence, by the necessities and conditions of the times has been enlarged, until it now assumes a phase of high importance to the profession, both of medicine and law. Its principles were applied in a primitive form centuries ago, but not until recent years has it developed into a science. It has made its present growth largely within the present century, and is now fully recognized by the general practitioner of both professions, as an indispensable part of his professional learning. This increased importance of the new science is due to two causes:

1. The science of medicine has been improved. Its rules and principles have been reduced to greater certainty; and the accuracy with which they have come to be administered, has firmly established the profession in the confidence of the people.

This was absolutely necessary to render medical knowledge available for the purposes of the law. In general theory the law of evidence deals only with facts, and not until the science of medicine had by experiment, observation and learning, been reduced to practical truth, was the medical expert an important factor in the administration of pure justice. But when he had arrived at that point in learning and skill where his opinion could be received by the court and jury with the force of a fact sworn to, then it became admissible as testimony, not so much as an exception, but rather because in effect, if not in fact, it came within the general rule.

2. The increased importance of medical jurisprudence is due to the changed necessities of the legal profession. The growth of population; the application of law principles to new fields of enterprise; the use of new inventions and motor power, increasing the number of "dangerous avocations;" the gen-

eral growth of life insurance, and the frequency of insanity inquisitions, all tend to increase the number of cases where the medical expert is useful and necessary; and the general recognition, by the legal profession of the value of this kind of testimony, as a means of arriving at the truth, impel lawyers to resort to it whenever applicable to the case in hand. In this connection, Justice Foster of New Hampshire, in Dole vs. Johnson said: "In the multiplication of interests connected with the application of the laws of science, which are daily growing more and more numerous and refined, it is hardly possible to dispense with the aid of experts in determining the rights of parties."

To define the term, medical jurisprudence, it is perhaps sufficient to say: "Medical jurisprudence is that science which applies the principles of medicine and surgery to the purposes of the law. Presumably the purpose of all law is justice; and when the established facts pertaining to the medical profession will contribute to that end, justice, then it is not only legitimate but highly proper for the court, the medium through which justice is administered to litigants, to resort to them to ascertain the truth. It is the general rule that witnesses are permitted to testify only to facts; and it is sometimes said that the admission of medical expert testimony, is an exception to that general rule. In a sense this is true, and it is on this account that there has grown up a system of legal rules governing the subject matters of expert testimony, the qualifications of the competent medical expert, the manner of his examination, the manner of weighing his testimony, the means of discrediting him, his compensation and his responsibility, and these rules have become so well established by long usage and general approval that they are now the principles of medical jurisprudence and constitute it a science. It is of the expert witness and his relation to these several rules that I wish to treat.

The first question to be determined when the medical expert takes the witness stand, is whether he is qualified to testify on the subject matter of the examination. The necessity of resorting to this character of evidence arises from the fact that the subject matter of inquiry is such that unskilled and inexperienced persons are not capable of forming a correct judgment on it, without assistance of this kind. If the expert, by study, training, experience and observation has become specially skilled in a particular science or profession, then he can speak with sufficient authority to entitle him to testify. It is not required that he should have gained eminence or distinction by his learnedness, or that he should understand the minutiæ or technique of the science. It is sufficient if he has made a special study or practice of the science or profession. The knowledge must be peculiar to himself and his profession, and not common to mankind generally. It is this general rule that admits the testimony of the physician or surgeon on all subject matter pertaining to the field of medicine and surgery. He need not have had any actual practical experience in the particular disease or injury to which he is called to speak, and even his scientific observation need not extend to that particular branch of the medical science. For example, the expert may never have treated a fracture, and yet be competent to testify as to the best methods of reducing it. He may in his practice never have seen a case of strychnia poison, yet he is entitled to speak on the witness stand of the symptoms of that poison, and its effect on the human system and of its antidotes. His information and learning concerning the particular case in hand, may be based entirely on the books and still he is competent to testify. It is considered that his study and reflection on the subject, and his observation and treatment of its analogies enable him to speak with authority. It is not sufficient, however, that a person not a physician or surgeon should read the medical books, and then testify to the information gathered therefrom, neither is it competent to read to the jury from medical books, even though they be the same from which the medical expert gathers his learning on the subject in hand. To admit the contents of such books in evidence, would be to accept the statements of the author unsworn to; and to permit the person unskilled in medicine and surgery to testify to what he had learned solely from such books would be in effect to admit as evidence the statements of a third person, and hearsay evidence is always incompetent. But perhaps a more important reason why such statement is not admissible, is due to the fact that the jury, being men unskilled in the science, is not capable of drawing correct conclusions from the matter read to them from the books, or related to them by the witness. It is just here that the usefulness and reliability of the medical expert is important.

1. He is capable of knowing what authors are standard authority.

2. He understands the technicalities of the medical author's language and properly interprets them to the jury.

3. Being skilled in the study of the principles of the science he can draw correct conclusions from what he has read.

So while it is competent that the jury may know what standard authors may say on the subject in hand, it must come through the proper channel—the man who has given the matter study and reflection—and in a sense has mentally digested it for the jury, who otherwise could not have assimilated and appropriated it to the purposes of the questions involved in the litigation. If it were possible to have a jury of twelve medical men in all cases where medical evidence is required, then the medical expert would be unnecessary. But he stands in two relations to the court:

1. As an interpreter, he translates the terms and language of the science to the jury.

2. As a thirteenth juror he draws conclusions from medical facts in evidence, and gives them to the other twelve.

The rule as to the necessary qualifications of the expert, generally, is so ably laid down by the authority above cited and it is so applicable to the medical expert particularly, that I quote the following:

"The object of all testimony in courts is to place before the jury a knowledge of facts pertaining to the case under consideration, and it is a serious departure from this purpose even to admit, instead of actual knowledge, mere opinion, however correct it may probably be, and therefore, opinion if admitted at all, should be as nearly approximated as possible to the actual knowledge of facts for which it is substituted; and it should always be required of an expert that he should at least be sufficiently acquainted

with the subject matter of his testimony to *know* what its laws are, and not merely to conjecture or to have an idea about it. That is, he should be really a man of science. The science (especially in the absence of skill) which an expert should be required to possess and employ on a given subject, implies that special and peculiar knowledge acquired only by a course of observation and study, and the expenditure of time, labor and preparation, in a particular employment and calling of life. . . . .

"We admit the wisdom of the rule which, permitting a man of genuine science to give as his opinion the results of study and research into books of knowledge and authority, yet will not allow such books to be read in court to the jury. The rule is founded partly in the delay which would thus be occasioned to the business of courts, and partly in the idea that it is safer, on the whole, to trust to the judgment of learned men, acquired by study, observation and skill, than to the imperfect deductions of jurors hastily derived from readings not familiar to them, unassisted by study, examination and comparison of kindred subjects. . . . .

"But so long as the opinions of the most distinguished and most learned authors in the world, expressed through the direct and pure media of their celebrated works, are thus excluded from the jury, surely it can be neither wise nor prudent to admit opinions unsustained by the slightest experience or even observation, the deductions of readings at best scanty and superficial, because not pertaining to the special study and business of the reader. . . .

"Of course it must be admitted that the testimony of knowledge and opinion, obtained from mere reading, without study, reflection or observation, is no more than a relation by the witness of that which the policy of the law excludes, namely, the books themselves which the witness has read.

"The limit of safety in this direction is reached, it would seem, when we admit the opinions of medical men with regard to a disease (or injury) which in actual practice they may not have treated, but concerning which the science and skill of long experience in the affinities and analogies of the subject have prepared them to speak with confidence, from a knowledge of the rules and laws governing the special subject of inquiry. . . .

"And so the practice in this State permits the skilled practitioner, who has made himself familiar with the science of medicine and surgery by a long course of study and practical experience with kindred subjects, to testify as an expert; and common sense demands that such a man shall have respect given to his opinion, though he may have had no practical experience in a particular case."

It would thus seem that to render the medical expert qualified to testify, he must really be a man of science, a practitioner, or one fitted by study and reflection to be a practitioner of medicine and surgery. The question as to whether or not the qualifications of the witness bring him within that rule, is a preliminary question for his honor on the bench, and with which the jury have nothing to do. If his honor finds on preliminary examination that the qualifications of the witness are such as to bring him within the rule, then his testimony is admissible, and his views are entitled to go to the jury. The weight to be given his testimony, is a matter purely within the province of the jury, and to enable them to act intelligently in weighing his testimony it is proper that they should know any and all facts pertaining to the knowledge of the witness, of the subject matter of which he testifies, the time spent in the study of the science, his years of experience, the extent of his observation, and whether or not the witness bases his opinion on the study of the books, or on his practical experience and observation, or both. And the law makes it the duty of the jury to take these matters into consideration, when they come to say whether they will give his statement much or little weight.

Assuredly it is not in all cases an easy matter for the court to determine the question as to whether the qualifications of the witness admit his opinions to the jury as an expert. Certainly the quack and the mountebank are not to be ranked as competent to give an opinion on which the life or property of a litigant may depend. They may be practitioners of medicine, yet poor reliance on which to hang important rights. But who is the quack? The man who first derogated from the practice of bleeding the patient, once so universal with the profession, may have been called a quack. He who first insisted on other remedies, than calomel, for certain diseases, perhaps violated the rules laid down and followed by the profession. At one time the man who dared to administer cold water and ice to the fever-stricken patient, might have been refused admission as a member to your honorable society. Such men may, in their day, be called quacks, and yet they are preeminently qualified to render an opinion, because they are truly men of science. He who by his diligence in study and research makes new discoveries in any science, is first of all entitled to speak, and yet it is not always an easy matter for the court, who is not a scientist in that line, to distinguish him from the mountebank and impostor.

"Nor does the court consider, in passing upon the qualifications of the expert, whether he belongs to this or that school of medicine. It is not presumed that he can say which is right and which is wrong, in their theory and practice of the profession; nor from what particular college he happens to hold a diploma. These are facts which the jury are entitled to know, and it is within their province to say on their oaths how much weight they will give to the opinion of the Regular, the Homeopath and the Eclectic.

Before leaving this phase of my subject it may be of interest and profit to refer to what the Supreme Court of our own State says on the qualifications of the medical expert, in Siebert et. al., vs. The People: "A licensed, practicing physician who is shown to be a graduate of a regular medical college, and to have practiced his profession for many years, is competent to give his opinion upon an hypothetical question setting forth the symptoms of a person immediately prior to his death, whether the death was from the effects of arsenical poison, although he may not be shown to have had any case of such poisoning. A medical witness, in giving his opinion as an expert, is not confined to opinions derived from his observation and experience, but may give an opinion based upon information derived from medical books."

While the courts of this and of European countries have very generally recognized the wisdom of resorting to expert opinion, to determine rights involving medical scientific questions, yet the manner of select-

ing the expert witness differs widely in the different countries; and there has been no little discussion as to what is the best method. In France it is made the duty of the court to appoint the expert, and it then devolves upon him to investigate the medical questions involved in the case, and report his conclusions to the court. In Germany, the state, after an examination as to competency, appoints medical men as experts to testify in cases where such testimony is required; and if desired by the litigants the opinions of these may be referred to a higher tribunal of medical experts, also appointed by the state.

In Prussia, the law provides for the appointment of a physician and surgeon in each county to act as medical experts. In case an appeal is desired, the matter is submitted to the medical college of the province in which the county is situated; and a still higher appellate authority is provided, by the appointment of a national commission of medical experts, which is a court of last resort.

In this country as in England, the manner of selecting medical experts is entirely different, and as we believe far superior to that of the countries named. Here each litigant may call from the profession whoever he chooses, to testify in his behalf, or in support of his theory of the case. It has been urged against this method that it offered too great inducement to fraud; that the expert would appear rather as an advocate, working for a fee than as a non-partisan witness; but this objection has but slight weight when placed in the balance with the objectionable features of other systems. The same may be charged against all other plans with equal force, for it simply means that there is danger of the litigant bribing the witness. The other plans mentioned involve the danger to which all appointive offices are more or less subject, namely, partisan prejudice and political corruption, and to the still greater danger of absolute incompetency and ignorance. There is no substantial objection to the American plan. The profession is made up very generally of men whose high moral and social standing is a guaranty against dishonorable means. There is perhaps no class of men, taken as a body, who have a deeper professional pride than that of physicians and surgeons. It is with them as with Cassio—it is reputation—and there is but little to fear of the medical expert risking his reputation by an unlawful collusion with the litigant who calls him. Moreover, if he should attempt to prostitute the science to false and fraudulent ends, he can hardly hope to escape disaster when it comes to cross-examination, for a false or ignorant *expert* witness is more vulnerable than any other. This is true because under the American plan he can be met by the most talented men in the science, and can be confronted by the very works on which he chooses to base his opinions. If the cross-examiner is equal to the occasion—and if he does his duty to his client he is thoroughly familiar with the medical side of his case—he will detect the falsehood or error of the testimony and disclose it to the jury. The very strength of the system is its tendency to encourage the selection of the best talent the profession can boast.

The manner of the examination of medical experts has occupied the minds of medico-legal text writers perhaps as much as any other one phase of the subject, and it is a matter on which there has not always been uniformity of opinions in the decisions of the courts. If the witness was the attending physician, he is asked to state his conclusions from the facts as he observed them, but if he has had no personal connection with the case, the facts, or what is claimed by the litigant calling him, to be the facts, are stated to him hypothetically and he must state his conclusions, drawn from the hypothetical statement of facts. Certainly if the facts are conceded or agreed upon by the litigants, or if they are proven and undisputed, then they need not be assumed. But if there is contention as to what the facts are, then counsel is bound to state the facts hypothetically according to his theory of the case, and call for the professional opinion of the witness thereon; and opposing counsel on cross-examination may propound to the same witness the hypothetical question based on *his* theory of the facts. If the facts are agreed on, or conceded, then the question must contain all the facts agreed on or conceded, and no more, for if the conclusion of the expert is based on more or less than the actual facts it is the duty of the jury to take that into consideration, and they could not logically give weight to an opinion based on a state of facts different from that involved in the case. When the facts are in dispute then counsel may assume any state of facts, pertinent to the case, of which there is any evidence before the jury, and the first thing for the jury to determine, when they come to consider the expert testimony, in making up their verdict, is whether or not the facts assumed in the hypothesis are the facts proven in the case, and if they believe from the evidence that they are, then they should give the conclusion of the expert, based on the hypothesis, due consideration, and such weight as they deem it entitled to. On the other hand, if they find from the evidence that the facts assumed by counsel in the hypothetical question are not the facts proven in the case, then, although the opinion of the expert is correct from the standpoint of counsel, yet it is of no value to the jury in arriving at the truth, because it is not applicable to the case proven, and they have no right to consider it. It is doubtless true that much profound medical learning and many able professional opinions have been wasted on the "desert air" simply for the reason that unskilled or unfair counsel do not embody the true state of facts in their hypothesis. If the hypothesis of the lawyer falls, the conclusion of the doctor falls with it. It is a pure, simple syllogism; if one premise fails the conclusion fails. As to the duty and rights of counsel in this matter I quote the following from Rice on Evidence:

"Counsel in framing hypothetical questions to be put to expert witnesses, are not confined to facts admitted or absolutely proved, but facts may be assumed, where there is any evidence on either side to establish them, which are pertinent to the theories which they are attempting to uphold. In the direct examination of their own witnesses, it would tend to confusion if facts were assumed in hypothetic questions which did not bear upon the matters under inquiry, or which were not fairly within the scope of any of the evidence. Upon the cross-examination of an expert, counsel may not be so narrowly confined but may, in putting hypothetic questions, assume any facts pertinent to the inquiry, whether testified to by witnesses or not, with the view of testing the skill and accuracy of the expert; but such cross-examination must, to some extent, be under

control of the trial court. The proposition here contended for, finds ample vindication in a recent decision of the New York Court of Appeals."

It is the prevailing rule that the expert witness is entitled to demand and receive adequate compensation for his opinions on the stand; and he can not be required to speak until it is assured. This applies only where he is called to give a professional opinion on a scientific question. He may be required to testify to matters of fact without other reward than the non-expert is entitled to, even though he becomes possessed of the facts while acting in his professional capacity. Thus, if a physician be called to attend a dying patient and the cause of the death should afterwards become a question involved in a suit at law, the physician may be required to testify to all facts he learned while attending the patient, and to all material matters observed by him. And this he does with the same rights as an ordinary witness, although his statement of the symptoms may be much more valuable than that of a non-professional man. But when the examination goes beyond the range of fact and calls for an opinion on a question on which none but a man of science is competent to give an opinion, then the expert may decline to answer until he is fitly rewarded for the information which the litigant seeks. This is so because this information is property. It is the physician's capital. To acquire it, cost him the expenditure of labor and money, and he can not by any rule of law or morals be compelled to divulge it in court for the benefit of the litigant who calls him, without pay, no more so than if called professionally to the bedside of the same party to administer to him. If the law were different it might create a great hardship on some members of the profession. It would be dangerous to acquire great distinction or eminence. The man most learned in this or that specialty of the science would be sought after on all occasions where questions in his line were involved. He thus might be called upon to devote his whole learning and energies to the benefit of parties in court to the demoralization of his own personal and private affairs and to his great loss. Law requiring this would seem to be hardly consistent with reason and justice, yet some courts have so held. We believe the Supreme Court of this State has not passed on the question. In general, that for which the expert is entitled to extra pay is his answer to the hypothetical question; yet there may be many other questions incidental to the leading issues that call for expert opinion, and to which the rule equally applies. The pay must necessarily be demanded from the party calling the witness. The testimony is presumably for his benefit, and he must pay; and this is true, even though the testimony should prove disastrous to his cause. The expert can not require pay from both sides of a case so long as his testimony is confined to the subject matter on which he was examined primarily. Thus if he offers an opinion on the plaintiff's theory of the case, he can not require pay from the defendant on cross-examination on the same subject. The defendant is entitled to have the jury know the qualifications of the witness, his means of knowledge and the authorities on which the opinion is based, and his reasons for his conclusions. He is bound to submit himself to all the legal tests, and he may be required to answer questions purely for the purpose of determining his credibility and reliability. But if the cross-examination goes beyond this and outside of the subject matter of the direct examination, and calls for a scientific opinion on other matters, the witness may refuse to answer on the ground that he has not been paid for the information sought.

Can a physician be compelled to divulge in court professional secrets, if a reasonable and satisfactory fee is first tendered? This is a question on which there seems to have been some diversity of legal opinion in the past, and a number of the States have settled the question by statutes governing the matter. We are not aware that the Supreme Court of Illinois has passed on the question, but in those States generally where it is not controlled by statute, the courts have held that the physician can not refuse to answer on the ground that his answer will divulge professional secrets, or that it is privileged communication; and that is the common law. As to the amount of the compensation, the law only requires that it shall be reasonable and its reasonableness should be measured largely by the qualifications and professional reputation of the witness, and the importance and difficulty of the questions on which he is called to testify.

It would be impossible for me in this paper to speak at length of the duties of the medical expert. His duties are so broad and varied, even a review of them can not be covered in so short a time. The chiefest part of them arises and must be performed before he is called to the witness stand. This is specially true of the physician who happened to be connected professionally with the case. It is not infrequently, that the very source of justice or injustice may be traced to the attending physician. For example, a physician is called to attend a person injured in an accident. The patient dies from the effects of the injury, and the question of the cause of the death arises in court in a suit for damages. If the physician has had an eye to the medico-legal phase of the case it often happens that through him the exact truth may be discovered, and if not through him it may not be discovered at all. It may be that a thorough and minute examination of all the details of the person and his injuries will disclose the source of the injury, and locate the negligence that caused it. He may be able to tell whether the force came from behind or in front, or whether the patient himself, by his negligence, contributed to the injury; and numerous other facts may be developed from the observations made by the physician. Again, he may be called to attend a patient to whom poison or abortifacients have been criminally administered, and while he is endeavoring to save the life of his patient he should gather and retain every fact that will tend to the discovery of the criminal. Every symptom that indicates the nature of the poison, should be carefully noted and the statements made by the patient not forgotten. And in case of death, no more valuable service can be rendered the cause of justice than that of taking in legal form the dying declarations of the victim. These statements, to render them admissible must have been made *in extremis*, under a sense of impending death, and at a time when the patient has lost all hope of recovery. It is better, though not imperative, that they be reduced to writing, read over to, and signed by the patient. Courts have expressly recognized the fact that these statements are more valuable if made to a medical attendant. Courts have admitted this kind

of unsworn testimony on the theory that the solemnity of the hour and the belief that death is imminent, and at hand, dissolves every motive to falsehood and impels the person to speak the truth. From these considerations courts give to such statements the sanctity of an oath. In a case of this kind a postmortem examination of the deceased is often absolutely necessary to discover the true cause of death, and should never be omitted, even though it adds but little to the physician's knowledge of the case. Every postmortem symptom should be noted and every part and organ of the body likely to disclose the kind of poison, should be preserved for chemic analysis. If the attending physician would bear in mind that the slightest minutiæ and detail are often of the utmost importance when it comes to the medico-legal side of the case, his sense of justice would prompt him to faithfully preserve them for use in court. If he should wilfully neglect or discard them from his mind to avoid the inconvenience or embarrassment of being called as a witness, he is simply guilty of professional cowardice.

It is only fair to the expert who has had no professional connection with the case, to state to him fully before he is called as a witness, all the facts in the case pertaining to the medical side of it. He may thus be placed to some extent on the same footing as the attending physician. It enables him to consider the facts in connection with his knowledge of medicine or surgery and reviews, if he desires, the authors he read in his novitiate. He can consequently give a more certain and mature and hence a more valuable judgment to the court and jury.

The duties of the medical man in cases where legal questions arise, are so numerous and important that no member of the profession can afford to be indifferent to them. To act as a witness in court may be odious to him but it is not optional; and however secure he may feel himself to be from the demands of the court he is almost certain, sooner or later, to be connected with a case where he is a material witness and will be required to testify. If he has had a due regard for his medico-legal duties as a physician he may be prepared to establish an important right, or redress a grievous wrong. If he has failed to note any material facts, it will likely prove the vulnerable point of attack on cross-examination. His dereliction will be made the most of by artful opposing counsel. The responsibility of the medical expert is commensurate with his duties; as the one is important so the other is grave. While he is by no means legally liable for an honest mistake of judgment, yet there is a moral responsibility from which there is no escape. There is perhaps no instance where the private citizen is placed in a more onerous position than the doctor, when called to the witness stand in certain cases. It is frequently the case that great property rights turn on the truth or error of his judgment; and he confronts a still more serious condition when the liberty or life of a citizen hangs on his testimony. Through his mistake a death by fiendish murder may be ascribed to innocent causes, or, what would be almost as bad, by an error on his part the guilty man would go unhung. It is true the medical expert has been the subject of much harsh criticism and abuse, and even courts in the past have spoken adversely to that character of testimony. Numerous decisions not a quarter of a century old may be found where high legal authority has denounced it as unreliable and unworthy of consideration. But later decisions indicate that courts have radically reformed their opinions in this direction and have come to regard medical expert testimony of the highest importance in determining rights involving medical and surgical problems. I venture the opinion that if to-day a case involving intricate medico-legal questions, were submitted to the Supreme Court of the State of Illinois for consideration, in which no medical expert testimony had been offered to assist it in arriving at the truth, it would censure counsel for what it considered a gross neglect of duty. In short, it has come to be regarded as absolutely indispensable to the functions of the court in many cases; and the physician who is ready, when called, to give an honest and mature judgment on questions in his line is a powerful and important factor in the administration of justice.

CONGENITAL AND HEREDITARY GOITRE.

BY CHAS. W. ROOK, M.D.
QUINCY, ILL.

Case 1.—Frederick, second child of Mr. and Mrs. F. B., was delivered by me, Aug. 22, 1893. Position of child in utero, L. O. A. Because of maternal exhaustion, the labor was terminated instrumentally. For a few hours, the child was cyanosed and respiration stridulous. The right lobe of the thyroid gland was of the size of a hen's egg, while the left was one-third less in size. Although the goitrous tumors have gradually decreased in size, the child involuntarily keeps its head extended that respiration may be more easily performed.

The mother, aged 23, and her sister aged 26 years, have been goitrous since the ages of 12 and 17 years respectively.

The notes of Cases 2, 3 and 4, the latter being a case of hereditary goitre, were kindly furnished me by my friend, Dr. E. B. Montgomery, of Quincy, Ill.

Case 2.—Mrs. W. H. M., aged 29 years, was attended by me, May 24, 1893, in her seventh labor as she had been in the previous six accouchements; she has been goitrous since her marriage thirteen years ago. The other children were all sound, healthy and free from blemish. The seventh child had, at birth, a very large goitrous tumor, extending well over the entire neck and up into the submaxillary regions and by pressure rendering the breathing stridulous as in laryngismus stridulus.

The infant remained cyanosed and the respiration noisy and croupous until its death, which occurred eight hours after birth.

Case 3.—Infant daughter of Mr. and Mrs. R. W. F., born Oct. 24, 1893. Each lobe of the thyroid gland was markedly enlarged. Respiration stridulous for twelve hours, after which it became easier. The following very unique family history was obtained: An elder brother of Case 3, nearly 5 years old, has been goitrous since birth. The mother of these children, aged 22, and her sister aged 19 years, each have well marked goitres; and the father, aged 28, and his sister aged 24 years, have goitres which they have carried since their earliest recollection; while the father's mother is also goitrous.

Case 4.—Miss E. B., aged 23; goitrous tumor involving the right lobe of the thyroid. Miss B. has always had a fat neck, but whether her goitre was congenital or not is unknown. The mother of Miss B. is about 50 years of age and also has a very large goitre, the growth being much larger on the right side. A daughter of the mother's sister is also goitrous.

For references to the literature of this subject, I am indebted to Surgeon J. S. Billings, U. S. A., and the *Index Medicus*.

Dr. Geo. S. Chalmers, now of Galesburg, Ill., mentions, in the *New York Medical Record*, Oct. 6, 1883, Vol. xxiv, p. 390, "A Case of Congenital and Hereditary Goitre."

He writes: "A few days ago I was called to a lady

in labor, and in due course she was delivered of a large boy. There was nothing remarkable in the progress of delivery, except that when labor had progressed well into the last stage, things almost stood still with the head firmly wedged in the lower strait. Imagine my surprise to see a well developed goitre on the child's neck. The swelling came up under the ears and with quite an enlargement over the windpipe. The goitre felt moderately firm as if from simple enlargement. The child was cyanotic at first, and had to be encouraged by cold water douches and manipulation before it commenced breathing; and then it was fully an hour before its color became natural. We soon discovered that if the head was kept fully extended, breathing progressed naturally, but if the head became flexed, breathing became irregular and the face cyanotic. It is now doing well, six days after delivery, and is a vigorous feeder.

"The mother is exophthalmic, with quite an enlarged neck and noticeably prominent eyeballs. I have never seen a case of congenital goitre recorded. What can be done for a case like this?"

From a recent correspondence with Dr. Chalmers concerning the above mentioned case the following notes are extracted:

"In regard to the case you speak of, I would say that the subject has been under my almost daily observation since his birth until somewhat over a year ago. He was a puny lad and I hardly expected to see him pull through the period of adolescence but, thanks to kindly care and the best of home surroundings, he has developed into quite a boy. His goitre never increased; in fact, is not as noticeable now as it was at birth. He is now tall for his age but slender, with rather a pale face. He is not bright; is somewhat dull of hearing and inclines to stutter in his speech. He is of an extremely nervous temperament, easily startled and, in that respect, quite childish. He has kept his place in school without falling noticeably behind and, if nothing happens, is likely to go through the high school course.

"The mother, also of a very nervous temperament but in better health than before the birth of the boy, is quite noticeably exophthalmic."

Captain J. C. Worthington, M.D., Asst. Surg., U.S.A., reports in the *New York Medical Record*, 1883, Vol. ii, p. 708, "A Case of Congenital Goitre Cured by a Single Application of Mercuric Biniodid." He writes:

"I first saw the patient, S. D. B., a well developed male infant, July 26, 1883, six hours after birth. The mother, a native of Prince Edward Island, and for a year past resident on her husband's ranch on the Uncompahgre River, Colorado, had had a slight goitre for over two years, the swelling having first been noticed during her previous pregnancy. The family was much alarmed at the appearance of the child's throat. On examination, I found a marked goitrous swelling, soft, but not fluctuating, on the right side of the trachea. The tumor was as large as a hen's egg. I advised that nothing should be done until the child was three months old, when I would attempt to cure it by an external application, which I thought would not be advisable before that time. I did not see the child until November 12, when it was brought to me by the mother for the treatment that I had promised. I found him a well nourished baby, healthy in every respect except the deforming tumor on the right side of his throat, which had increased with his growth, and filled the whole space between the chin and sternum on that side. His mother stated that the tumor now interfered with his breathing when he lay on his back. The flattening of the crown of the head, mentioned by Aitken, was now well marked. I confess it was with some misgivings that I prescribed for the child the treatment mentioned in Aitken's 'Practice of Medicine' as having been attended with such wonderful success in India. I ordered the following:

℞ Mercuric biniodid . . . . . gr. x.
Lard . . . . . ʒi.
M. S. Apply as directed.

"I directed as follows: At 10 A.M. on a bright, sunny day, rub well into the skin over the whole of the tumor a lump of the ointment the size of a filbert. Then hold the child, with the tumor exposed to the sun, at a closed window, as the weather was cool, for half an hour, then for an hour in front of a fire. At 2 P.M. of the same day repeat the application, and expose to the sun and fire as before. On November 28, the child's mother brought him to me —cured. She stated that the treatment had been carried out as directed on the 17th, except that the exposure to the sun in the afternoon had been for less than thirty minutes, on account of its being so painful to the little patient; that he had had much pain and cried a great deal the following night; that the skin had become very red and had peeled off wherever the ointment had touched it; that she thought the next day the swelling seemed smaller and on the 20th, three days after the application, the tumor was almost gone, and had grown smaller ever since until it entirely disappeared. When seen November 28, eleven days after the application, there was no evidence of cutaneous irritation, and the thyroid gland was just perceptible to the touch as in a normally formed infant. The cure was complete. No salivation or other indication of constitutional effects of the mercury occurred."

A. T. Sloan, M.D., Edinburgh, writes in the *British Medical Journal* for 1886, Vol. ii, p. 859, "Is Goitre Hereditary?"

"Whatever may be the primary source of goitre, there is every reason for supposing that, once established, it is often continued in families by inheritance, or at least, in this manner a strong predisposition to the disease is acquired. The question whether the malady is hereditary or not has given rise to much discussion; and not a few writers, including St. Leger, dispute the fact. (See Cretinisme, p. 108.) His arguments, however, are by no means convincing, and confirm the typically endemic nature of the disorder, without in the least degree proving that a disease which is endemic can not at the same time be hereditary. That heredity plays an important part in the production of goitre, a study of my cases clearly shows; thus of twelve cases collected by me at Wishaw, Lanarkshire, eight show distinct heredity. In six, the mother and grandmother both suffered from goitre; while, of the remaining two, one had a cousin affected with the disease, while the other's mother died of the exophthalmic variety. It is interesting to note this case; the mother for years subject to exophthalmic goitre, and the daughter, a strong, healthy girl, now with the ordinary variety.

"Of eighteen cases collected at Penrith, Cumberland, ten are distinctly hereditary; in eight the mother being affected, in two the father suffering

from goitre. In one case grandfather, mother and aunt were afflicted with the disease; in another, it revealed itself in grandmother, mother and aunt; while a third was congenital, the mother also being goitrous. No less than five cases instance the occurrence of the affection in members of the same family, those affected being sisters. Some of these had lived for a long time in different parts of the country. Dr. Croford mentions the case of a woman with goitre, whose grandmother, father, paternal aunt and cousins also had it, although they did not live in the same place and no other person in their neighborhood was affected with the disease. (Cyclop. of Prac. Med., p. 335.)

"The disease is not only hereditary, but may even be sometimes congenital. In one of my own cases the goitre has existed from birth, and recently I had notes sent me of two cases of congenital bronchocele where the mother also was affected. Dr. Keiller (*Edinburgh Medical Journal*, 1855), records an instance where he delivered a Mrs. K., aged 24, of her first baby, which with the exception of a very large goitrous tumor, was a remarkably fine male infant. Mrs. K. was brought up in Cumberland, her mother being a native of Keswick. None of her immediate relations had goitre.

"Dr. James Reid, (*Edinburgh Medical Journal*, 1836, p. 49) has seen three infants who had the thyroid tumor fully developed; and Fodére thinks he observed a distinct goitre in three cases of newly born children. M. Godelle, physician to the hospital at Soissons, had a preparation of the body of an infant, which lived a few hours only, and which came into the world with a goitre, the mother being afflicted with the same disease. Mr. Bromley affirms that in India both children and animals are born with it; and cases of congenital goitre have been recorded in Derbyshire.

"I think the facts just mentioned go to prove that goitre is really a hereditary disease."

Dr. A. W. McAlester, Columbia, Mo., reports, in the Transactions Missouri State Medical Association, 1882, a case of "Congenital Multilocular Cystic Degeneration of the Thyroid Gland," from which report I take the following extracts:

"By the courtesy of Dr. Trimble, I was called in consultation June 4, 1881, to see the child of Mrs. B. When first seen by me, the child, a girl, was ten days old. I found a tumor, with irregular outlines, extending from the angle of the right lower jaw to the median line of the neck, seven inches, thence towards the opposite side, two inches; from center of right clavicle to middle of lower jaw, five and a half inches; lobulated, translucent and, as I thought, fluctuant, with somewhat of a solid base near the median line and lower part of the tumor. The child grew and did well for three months, after which time it became emaciated, the tumor still growing, thus showing that the child was not capable of standing this division of nutrition, to-wit to nourish the growth and the body at the same time. The emaciation continued, and the tumor increased until the day of the death of the child, Oct. 21, 1881. Pneumonia was the immediate cause of death. At the postmortem held the following day, the tumor was found attached to the hyoid bone, thyroid cartilage and three adjoining rings of trachea, thus making an attachment of two inches. Its dimensions were, long diameter, eleven inches; transverse, six and a half inches; weight two pounds, and was partly cystic and partly solid. The fluid evacuated from the cysts was transparent, odorless and composed largely of albumen."

Lennox Browne, F.R.C.S., Ed., reports in the *Lancet* (London), Aug. 9, 1890, a case of "Congenital Enlargement of the Thyroid; Removal, Recovery," from which report I make the following extracts: "M. T., female, aged 10 years, was admitted to the Central London Throat and Ear Hospital on Nov. 21, 1889. The patient was born with a 'lump' in her neck the size of a marble, which has been growing ever since. When admitted, there was in the region of the thyroid gland a large irregular tumor about the size of a fetal head at 7 months. Dec. 22, 1889, Mr. Lennox Browne removed the tumor under chloroform, the resulting wound healing by Feb. 24, 1890. The growth was a fibro-cystic goitre originating from the isthmus of the thyroid gland."

George H. Ormsby, M.K.Q.C.P.I., reports in the *Lancet* (Lond.) Feb. 25, 1888, the following case of "Congenital Goitre:"

"On February 10 I attended Mrs. T. in confinement. She had a rather tedious time owing to the pains being feeble, but in every other respect the labor was natural, and she was delivered of a son. The cord was round the neck once. Immediately the child was born, I noticed the large size of the neck in front, and at first thought it was due to constriction by the cord. However, on examination it proved to be a true case of enlargement of the thyroid on both sides, the right side being much larger than the left. When I told the patient what was the matter with the baby's neck, she said she was not surprised, as her own neck had troubled her a good deal since last September, at times causing her some pain and a good deal of uneasiness. About the same time it began to enlarge, and she was in the habit of frequently feeling it; but though it bothered her, she did not think it worth while getting advice about it.

"Goitre is very common in this district, and I have two cases of Graves' disease under my notice at present. I have only had one case of goitre in the male, and have never till now heard of or seen an instance of congenital goitre. Taking the mother's statement into consideration, I am inclined to think that 'maternal impression' has had some influence in producing the complaint. I have seen the child again to-day (February 17), and although the left side seems a little smaller, the right is still the same size. The deformity does not in any way interfere with the child's breathing, or with his taking food. Perhaps some of your readers will kindly say if they have met with a similar case, and what treatment, if any, they adopted. I feel inclined to leave it alone for the present, and see what nature will do."

Dr. Frank J. Lutz, St. Louis, Mo., presents in the Transactions Missouri State Medical Association, 1882, a report upon "Congenital Cysts of the Thyroid Gland." From the Doctor's report the following cases are obtained:

"Berand and Dangan, (*Bulletin de la Societé de Chirurgie*, 1861, p. 108) reports the case of a five and a half months fetus, which was born alive, with a vascular, soft, follicular struma extending from one parotid gland to its opposite fellow."

Virchow, (Die Krankhaften Geschwuelste, Vol. iii, p. 51) "observed a case, also, in a five and a half months fetus, in which the struma was covered with veins and weighed 16 grams."

Boucher, (Kystes Congenit. du Con. Thése de Paris, 1868, p. 108) "saw blood effused into a congenital cyst of the thyroid in a seven months fetus."

Bednar, (Die Krankheiten Neugebornen und Saenglinge, Vol. iii, p. 80) narrates a case "in which there existed congenitally a cyst as large as a walnut in the right lobe of the thyroid."

Hecker (Monatschrift fuer Geburtskunde, 1868, Vol. xxxi, 2 and 3, p. 119) reports the "case of a child which at birth weighed seven pounds, and which died immediately afterwards of asphyxia. It had a goitre weighing 41.6 grams; the normal weight of the thyroid gland being between two and seven grams."

Hubbaner, (Wertembergsche Zeitschrift fuer Chirurgie und Geburtskunde, 1858, p. 1, and Honel Soc. Anat., Oct. 3, 1873) mentions the "case of a boy from whose left lobe of the thyroid gland there grew a soft fluctuating tumor much larger than the child's head, constituting an impediment to delivery."

V. Ammon, (Die Augebornen Chirurg. Krankheiten des Menschen, p. 57) details a "case reported to him by Adelmann, who observed it in Dieffenbach's clinic. The child was fourteen days old when seen by Adelmann. The goitre was so large that several physicians diagnosticated a fetus in fetu. When the child cried, the goitre became of a dark red color, and the veins of the neck became immensely swollen. The child lived ten months, and at the postmortem examination serous cysts and cartilaginous formations were found."

Demme, (Gerhard Handbuch der Kinderkrankheiten, Bd. 111, 2d Haelfte, p. 390) mentions a case in which he "observed a neoplasm of the thyroid which weighed 102 grams. The child died thirty-six hours after birth." The same author (p. 391) illustrates the case of a "twin boy with a congenital cystic struma. The twin sister of this boy was also born with a congenital enlargement of the entire thyroid, hyperemic in its nature. Both the father and mother of these children have bronchoceles; the former's being follicular, the latter's cystic." Demme also gives the following statistics: "Of 462 cases of struma observed in the Children's Hospital, Berne, Switzerland, 53 were congenital. Of the 53 congenital cases, 27 were simply hyperplastic in their nature, 14 were follicular and 9 were cystic."

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VACCINATION.

BY JOHN H. RAUCH, M.D.

Owing to the increase of smallpox in the United States during the last two months, the State Boards of Health of Ohio, Iowa and Wisconsin have ordered vaccination of all the school children, and in some cases of the entire population, as they were authorized to do by the laws creating them in order to protect the public health. At least 90 per cent. of the population of this country are favorable to vaccination. Still, in certain localities in Iowa, Wisconsin, Springfield, Ohio, and Williamsport, Pa., opposition has sprung up against the enforcement of vaccination. This opposition arises from prejudice, ignorance and resentment against a supposed interference with personal liberty and the dispensations of Divine Providence. The writer, during a professional experience of over forty years, and an official sanitary experience of over thirty years, has vaccinated or personally superintended the vaccination of more than two hundred thousand individuals, and has never known any one to die because he had been vaccinated, but has known thousands to die because they had not been vaccinated and re-vaccinated. While there are no doubt cases where vaccination has been the direct or indirect cause of death, still, they are so rare that compared with the protection given, the objection can not be regarded as valid, and from a general standpoint the refusal to submit to this measure of protection can not be tolerated. Individual rights must be respected, certainly, but it is the right of no man so to use his liberty of action as to endanger the rights and lives of others.

In Illinois, during the epidemic of 1881–1883, the recovery of the vaccinated was 94 per cent. and the mortality 6 per cent.; while of the unvaccinated 51 per cent. recovered and 49 per cent. died. Smallpox proved to be as destructive of life as in any epidemic of the pre-vaccination period wherever its contagion was introduced among the non-vaccinated, the mortality rising in this class to nearly 50 per cent. On the other hand, just in proportion as vaccination *and re-vaccination* had been efficiently performed, that mortality was diminished—falling from a death rate of over forty-four in a hundred attacked who had not been satisfactorily vaccinated, to absolutely no deaths among the few who, having been efficiently vaccinated, were still attacked with the disease, but were again successfully vaccinated after exposure. The duration of the disease, its severity, and its results were found to bear a direct relation to the vaccinal history of the patient; where this was *nil*, there was the longest duration (except where terminated by death), the greatest severity, and the most disastrous sequelæ; where the vaccinal history was good, the disease was mild, often of only a few days' duration and never followed by disfigurement or loss of sight or hearing, or by other disability. It was also found that, after the contagion had obtained a foothold in a community where vaccination had been neglected, no enforcement of sanitary measures, nor isolation of cases, then availed to restrict the epidemic influence or tendency until vaccination and re-vaccination had been made general. It was not until vaccination and re-vaccination became general in this State that the epidemic was stayed.

A recent report of the Philadelphia Municipal Hospital shows that of seventy-eight unvaccinated infants under one year of age admitted while suffering from smallpox, fifty-seven or almost three-fourths, died; while of vaccinated infants of the same age none died. In Leicester, England, during the epidemic of 1893, there were 126 persons who had never been vaccinated, and who caught smallpox, 83 were under 10 years of age, and in 9 of these the dis-

ease was fatal, whereas there was no instance of smallpox occurring in a vaccinated child under 10 years of age; and of the 155 cases of the disease occurring in persons who had been vaccinated, but not re-vaccinated recently enough to save them from varioloid, there were no deaths. The effect of compulsion in the matter of vaccination is forcibly demonstrated by a comparison of three European nations which make it optional—Austria-Hungary, Russia and France—where the number of deaths from smallpox in two recent years ranged between 157 and 583 per million; and as many nations which make it compulsory, Denmark, Sweden and Norway having no deaths at all during either of the years, and the proportion in the German Empire being only 0.8 and 1.8 per million in the two years.

It is undoubtedly the duty of all health officers to secure the vaccination and re-vaccination of every person in the community so far as it is possible.

Medical men and nurses when called upon to attend cases of smallpox, no matter what may have been their previous personal experience, either as regards vaccination or smallpox, should at once be vaccinated as a matter of precaution, both for their own safety and that of the public.

STERILIZING WATER AND MILK IN HERMETICALLY SEALED BOTTLES.

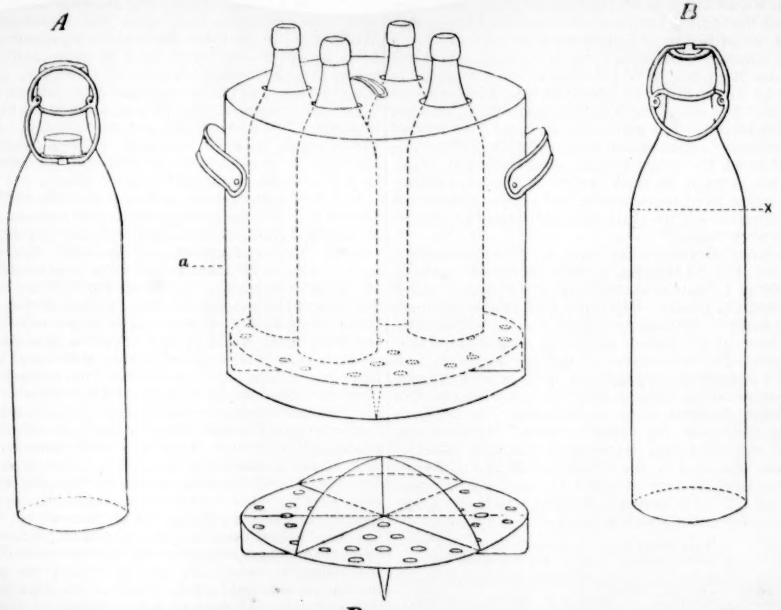
BY W. E. GAMBLE, B.S., M.D.
CHICAGO.

Professor C. A. Cary of Auburn, Ala., while visiting me last summer, called my attention to a sterilizer of water and milk which he had originated. His method is a new one to me, and I think to the rest of the profession; it consists in the use of hermetically sealed bottles.

I have used a simple contrivance which has served me much better than any other sterilizer. I use pint beer bottles with "lightning stoppers." (Fig. A.) They can be obtained of any liquor dealer or grocer.

The bottles are placed in a vessel (Fig. C), a six quart tin bucket is a suitable size for family use, as about six pints of milk or water can be sterilized at a time. The lid of the bucket has six one and one-half inch openings through which the necks of the bottles pass. (Fig. C.)

A loose false bottom rests on the true bottom. (Fig. D.) This is raised one inch from the true bottom, by two strips standing on their edges rising at right angles to each other and soldered to under surfaces of false bottom. This apparatus should not cost more than one dollar.



In using this appliance space must be left to allow room for the expansion of steam, and yet I have been careless as to the amount of space to leave for that purpose without untoward results; however, the space between the bend in the bottle, x, (Fig. B.) and the cork should remain unfilled.

To raise milk to 150 degrees F., not higher than 167 degrees, Professor Cary has by experiment found the following conditions necessary:

Bottles are filled to x, Fig. B, closed and placed in sterilizing vessel; cold water is poured into sterilizing vessel until it rises one-fourth of an inch above false bottom, the sterilizer is then placed over the

fire and heated until water in vessel boils eight to fifteen minutes. As a rule eleven minutes is sufficient. But should water in vessel be heated very rapidly let it boil fifteen minutes. If water comes to a boil slowly, say thirty minutes, allow it to remain eight or ten minutes. The vessel should be taken from stove and covered with dry cloths and allowed to stand for about a half hour.

A temperature of 140 degrees F., which is sufficient to destroy growing and adult germs can be obtained without the scrupulous care mentioned above. A higher degree of heat than 167 degrees is not desirable in sterilizing milk, on account of the chemic disorganization which takes place.

A temperature of 200 to 212 degrees F. is desirable in sterilizing water. This high temperature is easily obtained by filling the sterilizing vessel with cold water as high as the level of the water in the bottles, i. e., x, Fig. B. Cover the perforated lid with cloths; then allow water in vessel to boil from thirty to sixty minutes; after bottles are partially cooled, they can be transferred to ice chest.

Water or milk sterilized in this manner does not taste "flat." They lose none of the absorbed oxygen or nitrogen which makes them palatable. The question is often asked at our table: "What mineral water do you use? It is so palatable."

It is the simplest way to sterilize water and remains air tight until used. The cheapness of the apparatus is another factor in its favor. Professor Cary says that milk can be raised to higher temperature in this way without chemic change than by the open method.

264 S. Halsted Street.

APPENDICITIS; WITH ORIGINAL REPORT AND ANALYSIS OF ONE HUNDRED AND FORTY-ONE HISTORIES AND LAPAROTOMIES FOR THAT DISEASE UNDER PERSONAL OBSERVATION.

Read before the Pan-American Medical Congress.

BY J. B. MURPHY, M.D.

CHICAGO.

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(*Continued from page 352*).

Case 87.—Date of operation, April 9, 1893. Operator, Dr. Murphy. Miss W., aged 12 years. Case occurred in practice of Dr. T. J. Conley. Typical attack. Examination: Induration with resonance on percussion, tenderness general. Temperature at time of operation 99 degrees, pulse 96. Operation: Lateral incision into general peritoneal cavity, escape of about one quart of pus. No foreign body to be felt. Appendix was not removed; general suppurative peritonitis. The coils of intestines were covered with a thick layer of fibrin, which, I believe, accounts for the absence of absorption and toxic symptoms; recovery.

Case 88.—Date of operation April 21, 1893. Operator, Dr. Murphy. Mrs. I., aged 24 years. Case occurred in practice of Dr. Heartler. Present illness commenced with sudden general abdominal pain and vomiting; fever. Examination revealed tenderness over appendix; induration. Operation on fourth day after attack. Lateral incision into peritoneal cavity; circumscribed intra-peritoneal abscess. Appendix removed; drainage; recovery. An extensive gangrene of the appendix was present, but no perforation.

Case 89.—Date of operation May 6, 1893. Operator, Dr. Murphy. R. C., aged 13 years; male. Case occurred in practice of Dr. McKee. Patient was sick one month before seen by operator. Onset typical. Examination: Large induration extending over lower half of abdomen; tympanites; tenderness. Patient very much emaciated and cachectic. Temperature normal. Operation: Abdomen opened at most prominent point of induration, which was to the left of the median line; appendix not removed; drainage; recovery. A general suppurative peritonitis was present. The intestines were covered with a layer of fibrin.

Case 90.—Date of operation May 13, 1893. Operator, Dr. Murphy. Alexian Brothers' Hospital. H. S., iron worker, aged 26 years. Patient had first attack about two and one-half years ago, which came on suddenly while riding in a street car; the sudden pain commenced in the right iliac fossa and soon spread over the entire abdomen. Patient has always had more or less tenderness over the appendix since this time, and has had quite a number, twenty-four, similar attacks in intervals of five or six weeks. The attacks consisted of pain in right iliac region, vomiting, nausea, slight chills and fever. Bowels have always been kept regular by use of cathartics. During the attacks there has been a desire to micturate which persisted until attack subsided. This attack has been more severe than any other. Herpes zoster in right iliac region. Operation: Appendicisectomy and drainage. Time, four and one-half minutes. Temperature after the operation remained below 100 degrees. Recovery.

Case 91.—Date of operation June 3, 1893. Operator, Dr. Murphy. Mr. K., aged 22 years. Was operated upon five months previous. Recurrent attack; patient sick five days. Operation: Lateral incision; intra-peritoneal abscess. Appendicisectomy; enteroliths; drainage; recovery. Appendix was perforated and showed local gangrene.

Case 92.—Date of operation June 4, 1893. Operator, Dr. Murphy. C. H., male, aged 28 years. Patient was taken sick May 31, 1893, with moderate pain in abdomen which gradually became worse and localized in lower half. Nausea, vomiting. On the second day pain became localized in the right iliac region and gradually increased. In the evening of the third day he experienced a sudden severe pain accompanied by a sensation as if something had ruptured within the abdominal cavity. Examination: Tenderness, induration and dullness in right inguinal region. Operation: Appendicisectomy. Intra-peritoneal abscess incised; fecal stone escaped with pus. Fecal fistula followed operation which lasted for ten days. Temperature ranged up to 101.5 degrees after operation. Recovery. Subsequent examination showed protrusion of abdominal wall; a small hernia.

Case 93.—Date of operation June 5, 1893. Operator, Dr. Murphy. Alexian Brothers' Hospital. P. H., aged 30 years, male. About six years previous to operation, patient was attacked with severe pain in the abdomen, followed by nausea and vomiting. The pain was very intense for five hours, then the fever set in. He has had a dozen similar attacks since; felt drowsy and sleepy the day before each attack. Had chills and fever each time. Examination: Induration, increased local tenderness; tympanites. Operation sixth day after onset. Lateral incision; general peritoneal cavity opened; appendix adherent, removed; fecal stone. Drainage; recovery. For twelve days after operation temperature remained below 100 degrees. On the 16th rose to 103 degrees, but fell to normal shortly.

Case 94.—Date of operation June 16, 1893. Operator, Dr. Murphy. F., aged 18 years; male, Woodstock, Ill. Case occurred in the practice of Dr. L. C. Waters. Sickness began five days ago with a typical attack. Examination: Induration, local tenderness, temperature 99.5 degrees at the time of operation. Operation: Lateral incision, intra-peritoneal abscess; appendix adherent, removed. Drainage; recovery. Pathologic conditions: Fecal stone, local gangrene of appendix, perforation.

Case 95.—Date of operation June 16, 1893. Operator, Dr. Murphy. Th. M. G., aged 13 years, male. Case occurred in the practice of Dr. P. H. Conley. Illness began June 9 with sudden pain and tenderness in the abdomen; this was soon followed by vomiting and fever. This condition lasted until time of operation. General tympanites, circumscribed induration in right iliac region, local tenderness; temperature before operation 102 degrees F., pulse 110. Operation: Lateral incision, large intra-peritoneal abscess; appendicisectomy; no foreign body; appendix ulcerated, not perforated. Recovery.

Case 96.—Date of operation July 8, 1893. Operator, Dr. Murphy. W. F., aged 16 years, male. Case occurred in the practice of Dr. W. H. Bouton. Commenced with sudden attack of pain in right iliac region, extending all over

abdomen. Fever, slight induration, which was more pronounced under anesthesia, and under the influence of the latter, appendix could be outlined. In attempting appendicisectomy the ligature, which was tied around the base of the appendix cut through; no further attempt at ligation was made; intra-peritoneal abscess at seat of operation drained. Appendix slightly adherent, adhesions easily separated, owing to a complete gangrenous condition of appendix, which also accounted for the ease with which silk tore through in attempting ligation. Appendix not perforated. Fecal fistula on third day, which closed in thirteen days. Temperature subsided immediately after operation; recovery.

Case 97.—Date of operation July 12, 1893. Operator, Dr. Murphy. Female, 26 years of age. Patient had a typical attack on the 9th of July, 1893, three days before operation; had pain, tenderness, vomiting, temperature and slight induration. Operation: Incision and removal of appendix; about an ounce of pus escaped, which was of a very offensive nature. Drainage; recovery. The appendix showed a perforation on its side near the base. No foreign body. Cicatrix showing seat of previous perforation. This case was operated upon May 1, 1892. Simple drainage of abscess.

Case 98.—Date of operation July 13, 1893. Operator, Dr. Murphy. Case occurred in practice of Dr. Hoelscher. Mrs. N., aged 24 years. Present illness began five days before operation, with severe vomiting and slight pain in right iliac region. The vomiting persisted up to the time of the operation regardless of treatment. *No induration, no local tenderness, no temperature*, pulse 120, anxious expression. Operation: Lateral incision; general peritoneal cavity opened; no peritonitis. Cecum drawn over towards uterus, and firmly held there by the appendix, which was adherent to the uterus and produced intestinal obstruction. Appendix removed; twenty-four hours drainage; rapid recovery. Appendix very much elongated; contained no pus; ecchymotic at the end where it was adherent to the uterus.

This case is very instructive as the symptoms corresponded exactly with the pathologic conditions, and did not suggest acute appendicitis, but intestinal obstruction, and is the only case in which there was an absence of pus or cicatrices showing the previous existence of pathologic conditions.

Case 99.—Date of operation July 18, 1893. Operator, Dr. Murphy. I. D., aged 56 years, male. Alexian Brothers' Hospital. Four weeks ago patient experienced a sudden attack of severe pain in right half of abdomen. Progress of disease characterized by a dull, heavy, aching pain in right groin and hip. Patient jaundiced since commencement of attack. Stools normal; difficulty in micturition; great tenderness on palpation over right iliac region; induration. Patient is unable to completely extend right thigh. Operation: Drainage of a large circumscribed abscess containing about three pints of pus. Appendix situated behind cecum; not removed. Recovery.

Case 100.—Date of operation July 23, 1893. Operator, Dr. Murphy. Mrs. C., aged 25 years. Patient was attacked on July 19 with severe pain all over abdomen; the pain was more severe over right side. It was accompanied with nausea and vomiting, which continued up to time of operation. Temperature July 19, 103 degrees; pulse 96; 20th, the same; 23d, 10 P.M., temperature 102 degrees, pulse 90. Abdomen enormously distended, dull over lower half. Operation: Lateral incision; a quart of fluid of sero-purulent nature escaped from the general peritoneal cavity, which covered the bowels to a great extent. Drainage; recovery.

Case 101.—Date of operation July 24, 1893. Operator, Dr. Murphy. T. S., aged 25 years; male. Alexian Brothers' Hospital. Twelve recurrent attacks during the past two and one-half years, lasting from three to ten days. Appendicisectomy in immediate stage; drainage; recovery. Appendix extensively adherent; mucous membrane ecchymotic. A marked stricture in middle of appendix, resulting from cicatricial contraction of former ulcerations.

Case 102.—Date of operation July 25, 1893. Operator, Dr. Murphy. J. H., aged 14 years; male. Case occurred in practice of Dr. Quine. Patient had a typical attack of appendicitis two weeks previous to the operation accompanied by fever, local tenderness, induration. The temperature subsided on the tenth day to normal, and remained so for three days when it gradually began to increase and by the thirteenth day reached 102 degrees. The area of induration increased rapidly and was somewhat tender. On the fourteenth day there was a large induration in right iliac region. Pulse and temperature both good. Operation: Lateral incision directly into an abscess. General peritoneal cavity not opened. There was no gush of pus when the abscess was opened as is usually the case, showing an absence of tension in the abscess. There was considerable fresh blood in the abscess cavity. Two fecal stones. No effort made to locate or remove the appendix. Drained. After recovering from the anesthetic the patient complained of intense abdominal pain and vomited persistently. Tympanites rapidly set in; patient collapsed, and died fourteen hours after the operation. The course of this case after the operation indicated that the abscess ruptured between the coils of the intestine and the pus emptied into the peritoneal cavity before the incision was made, explaining the reason why pus did not escape when abscess was opened, as well as the hemorrhage into the abscess. This opening was not detected at the time of operation, nor could it be seen that the pus escaped into the peritoneal cavity, as that was not opened beyond the line of adhesion. This also accounts for the collapse of the patient, for the symptoms were those of a fatal sapremia.

Case 103.—Date of operation July 26, 1893. Operator, Dr. Murphy. Case occurred in practice of Dr. Rohr. F. O., aged 43 years; male. A week before operation patient was suddenly attacked with pain in right iliac region, followed by vomiting, nausea and tympanites. Pain and tenderness all over abdomen, especially in lower half. Temperature 99⅕ degrees at time of operation; pulse 100.

Operation: Lateral incision. General peritoneal cavity opened. A general dry septic peritonitis present. Appendix situated behind cecum, very difficult to locate; the adhesions around the same were loosened and the appendix removed. The appendix was large, gangrenous and showed perforation through which a fecal stone projected. Iodoform gauze drainage.

I desire to call your attention especially to the fact that this patient was not collapsed at the time of operation, that his temperature was 99½ degrees, and his pulse 90, notwithstanding that he had a general septic peritonitis involving all of the abdominal viscera, and had it for some time previous to operation. Death twenty-four hours after operation.

Case 104.—Date of operation July 27, 1893. Operator, Dr. Murphy. M. O. C., aged 22 years; male. Patient suddenly attacked with pain in region of right kidney. Extreme tenderness over appendix extending high up above crest of ilium and up to margin of ribs behind, but not in front. No tympanites until the morning of operation. At 4 A.M., on day of operation patient felt the abscess rupture; he described a sudden bursting in his abdomen, followed by great pain and depression. Operation four days after attack. Incision; appendix difficult to locate; an abscess cavity was found and the appendix formed a part of its wall; it was gangrenous, had ruptured and located behind cecum. Two fecal stones were removed. There was present a dry septic peritonitis, the result of a rupture of the abscess the morning of the operation. The intestines were denuded of their endothelium and flakes of pus and some sero-purulent fluid rested between the coils. The operation was refused forty-eight hours preceding the rupture of the abscess, and the delay sacrificed the patient's life. Death thirty-six hours after operation from sapremia.

Case 105.—Date of operation July 28, 1893. Operator, Dr. Murphy. T., aged 18 years; male. Case occurred in practice of Dr. Berry. Patient complained of abdominal pain and vomiting on the night of the 24th. Called the doctor on the evening of the 25th, temperature at this time was 103 degrees; pulse 120. July 26, A.M., temperature 102 degrees, tympanites increased, pain diminished. July 27, P.M., temperature 101 degrees, pulse 100, very little pain. July 28, temperature 101 degrees, pulse 100. Operation: Lateral incision, circumscribed abscess, general peritoneal cavity not opened. Fecal stone escaped with pus. Appendix not removed. Drainage; recovery.

Case 106.—Date of operation July 28, 1893. Cook County Hospital. Operators, Drs. Murphy and La Count, House Surgeon. J. M., aged 32 years; male. Patient's trouble began twelve days before entrance to hospital, with severe pains in abdomen, accompanied by vomiting. Later on a dull aching pain developed in the right iliac fossa which was persistent; vomiting continued a little every day until day of operation. Could keep nothing on stomach. Bowels moved daily. No chills; no fever. Later on an induration became visible in right iliac region. Operation: Usual incision: general peritoneal cavity not opened; escape of eight to ten ounces of purulent, fecal smelling pus. Digital

examination of pus cavity detected sacculated condition which was broken down and made into single cavity. Packed with gauze. Upper part of wound sutured with silk. Patient made rapid recovery.

Case 107.—Date of operation July 31, 1893. Operator, Dr. Murphy. A. J., aged 22 years; female. Case occurred in practice of Dr. P. H. Conley. Patient had a previous attack about a year before operation, but not as severe as present one. Sudden attack July 24, 1893; pain in right iliac region, nausea, vomiting, tympanites, induration, dulness on percussion. Operation: Lateral incision; extensive suppurative peritonitis extending into Douglas pouch and up behind the cecum and colon to the kidney; drainage; recovery.

Case 108.—Date of operation Aug. 5, 1893. Operator, Dr. Murphy. R. W., aged 18 years; male. Alexian Brothers' Hospital. Patient had had previous attack June 25, 1892, for which he was operated; simple drainage (see Case 55). Had a second attack in August, 1892, which only lasted a few days. The present attack (third) began with sudden pain in the abdomen caused by straining himself while working at his lathe. The pain and vomiting were so severe that he was compelled to go to bed. At first, pain was located in right iliac region, but in a few hours it extended over the entire abdomen. Examination: The temperature reached 102 degrees, fifteen hours after onset, and he presented himself for operation sixteen hours later. Temperature 99.7 degrees; pulse 80. Tympanitic, general abdominal tenderness; dulness on superficial percussion over lower half of abdomen. Operation: Lateral incision; general peritoneal cavity opened; found full of a thin purulent fluid. The wall of an old circumscribed abscess was seen in which was detected a small opening. On opening this wall extensively half of the appendix was found to protrude into it. The appendix was very much enlarged, thickened, and at its tip an enterolith protruded. This condition had existed for a long time, as could be seen from the pathologic condition of the opening. Although the peritoneum of the intestine and omentum was congested, it still retained its gloss, and was not eroded of its endothelium. Appendix ligated, amputated. Recovery.

REMARKS.—The cause of the peritonitis in this case was the rupture of a circumscribed abscess that had existed since the previous August, or the time of the second attack. The wall of the abscess was very firm. It will be noted that while a general suppurative peritonitis was present at the time of the operation, and had existed for thirty-one hours, the patient was not collapsed; his temperature was only 99.7 degrees, and his pulse 80.

Case 109.—Date of operation Aug. 8, 1893. Operator, Dr. Murphy. J. J. D., aged 23 years; male. Present attack began July 28 with sudden pain in the region of the umbilicus, which rapidly localized itself in the right iliac region. Marked induration over appendix. Temperature 102 degrees day before the operation. Has vomited several times since the onset of attack. Temperature on morning of operation 100 degrees. Operation: Lateral incision, general peritoneal cavity opened; circumscribed abscess found which contained half a pint of pus. Appendix amputated. Drainage; recovery. Pathologic conditions: Appendix enlarged, local gangrene with perforation. No foreign body.

(*To be continued.*)

SOCIETY PROCEEDINGS.

American Electro-Therapeutic Association.

The Third Annual Meeting Held in Chicago, Sept. 12, 13 and 14, 1893.

AUGUSTIN H. GOELET, M.D., President.

(*Continued from page 356*).

FURTHER STUDY OF ELECTRO-ANESTHESIA AND FREQUENCY OF INDUCTION VIBRATION.

The following illustrations will show what class of cases I have found benefited by the anesthetic current, where other forms of electricity failed:

Miss F., age 25, a strong, handsome woman, had been for several years a victim to supra-orbital neuralgia of an aggravated type. During the crises she was in the habit of taking large quantities of drugs to quell pain, principally such derivatives as antipyrin, acetanilid, etc., until stomach action was greatly impaired and heart rhythm completely broken up. Fortunately, she had avoided opium, having sense enough to know that remedy to be worse than disease.

Examination of heart gave 110 beats, with a confused mixture of sounds from which nothing normal could be extracted, considerable dyspnea, aversion to food and general hyperesthesia of nerves. She came to my rooms in a violent attack, pain being too severe to admit careful testing of nerve impulse rate, and faradism employed with the rheotome sounding C major. In fifteen minutes the painful spot was anesthetic, all suffering gone and patient happy.

Tests were then made to ascertain normal speed of nerve force, with a result of .0500, corresponding to a tone very slightly above major C, closely enough for practical work.

Miss F. is now in her third week of daily twenty minute sittings, and the neuralgia has only recurred once, in a much modified form. I propose to continue the treatment a month longer and then suspend for a month, when, if there is no trouble, I shall dismiss the case.

Miss S., age 48, nurse. Pure nervous temperament, slender, sallow. For years Miss S. has been under more or less medical treatment for uterine displacement and catarrh. In 1882, I operated upon her electrolytically for rectal stricture, during the course of which she had formed opium habit, which required four months to cure. Pain during defecation and afterwards was so severe that any habit was as nothing compared to relief at the time.

From that time until two months ago I lost sight of her, when she returned with a beginning of the old sensations of uneasy rectum, difficult, spindling stools and general nervousness, together with intense pain in right flank, extending down the front of leg on that side. Rectal examination showed no stricture, but a mass of hemorrhoidal veins nearly occluding the canal, some protruding through the sphincter, contraction of which probably caused the pain. The muscle was stretched and veins obliterated by fine electric needles, but the neuralgia persisted, recurring at irregular intervals and aggravated by patient's nervous hyperesthesia.

She was placed upon Mariani's Thé Cocoa, a preparation which I have found almost magical in relief of nervous debility, and soon grew better of her restless uneasiness. Still the sharp pain kept up.

Some two weeks ago, on a stormy day when leisure was plenty, I spent several hours measuring her nerve rate, using both medians, both sciatics and the long thoracic trunks. There was remarkable unanimity of speed, a dead point being reached by C a little sharp in each nerve, which is about normal.

She was therefore placed under faradic treatment with rheotome singing sharp C, one electrode, a broad sponge, at the sacrum, the other at the motor point of adductor muscles just inside the knee. A sharp thrill followed circuit closure which went to the toes, and after ten minutes a certain sense of numbness in the thigh, but not much relief to pain. I suspected that neuritis had begun, but sent her away to wait three days. Upon her return she reported improvement, and the same applications were continued until the present, with steady gain, but slow. In this case it was impossible to produce anesthesia extending far enough to be of value; yet the curious sense of numbness in the foot which follows circuit closure each sitting, indicates clearly that it is not the fault of the remedy that she is not cured; it is but the ignorance of the operator.

I do not know why pain should subside under the electrode alone, while every experiment I have made shows that an entire nerve trunk, when intercalated, is traversed and physiologically affected by the electric energy employed.

Some of you may recall that during the discussion which followed the reading of my paper before you last year, Dr. Herdman remarked that purely mechanical explanation was sufficient to account for the action of the singing rheotome, and Dr. Num said that there is undoubtedly a percussion taking place through the cells of the body when a muscle contracts under the influence of induced electricity.

These later studies seem to indicate that the keen perception of these gentlemen was right, and that mechanical vibration may enter into diagnosis and treatment of nervous disease more than before. Yet, bearing in mind my own therapeutic failures when percussion without electricity was employed, I believe that the latter is a part of effect, not the former.

And I desire to thank these gentlemen who have taken the trouble to provide themselves with a singing rheotome, in order to confirm my experiments, or to fail, as I have often done myself. Let us hope the former.

The following communication on

ALTERNATING CURRENTS IN ELECTRO-THERAPY

by DR. GEORGES GAUTIER and J. LARAT of Paris, France, was then read in abstract by DR. LAPTHORN SMITH.

Preamble.—In reviewing the works, treatises and monographs relating to medical electricity that have appeared during the last fifteen years, we find that so far from remaining stationary, electro-therapy has extended its domain, multiplied and defined its applications, but using only forms of electricity already known: Franklinism, faradization, galvanism.

During the last twenty months, however, an altogether new way has been opened to electro-therapeutists. It is a method not yet used in medicine; alternating currents with high and low potential, with medium and extra rapid frequency.

It is well first to define these terms before proceeding to show what physiologic or clinical results have been already obtained by the use of these currents or what future one has to expect from the use of them.

The common faradic current, furnished by a Ruhmkorff's coil, connected with a vibrator is in the strict sense of the word an alternating current, since, if we consider one of the rheophores, this is alternately positive and negative; but it has defects or rather qualities which distinguish it essentially from the current which we mean when we use the word *alternating*. Let us consider the nature and action of the current which is produced during an oscillation of the vibrator. At the moment that the hammer by its electricity or weight comes in contact with the block, the circuit is closed and we have the inducing current which develops by induction a secondary current (induced) in the opposite direction (it is understood that we leave out the question of extra currents which do not belong here); but this momentary current has sufficed to render the soft iron a magnet, the hammer is attracted by the electro-magnet and oscillates in the space, to come in contact with the soft iron. At the moment when it leaves the contact, we get the induced current in the same direction. During this oscillation there is no induced current, and as the duration of this oscillation is very long in proportion to the time of contact the time lost is considerable.

The faradic current then possesses the property of being very rapid and consequently of attaining its maximum very rapidly. It is a current essentially intermittent and a simple graphic representation explains the nature and form of the electro-faradic wave.

The current which we propose to study under the name of alternating, produced by alternating dynamos, (Siemens, Patin-Ferranti, etc.,) attains its maximum very gradually and no time is lost. It can be represented graphically by a curved line, somewhat undulated on account of phenomena of self-induction which the scope of this article does not permit us to analyze.

On the one hand, then, the *time* during which the current acts is more considerable on account of no time being lost; on the other hand, its *potential* can be born, higher; the irritation of the sensitive nervous system being, as demonstrated by Prof D'Arsonval, a factor in the variation of the fall of potential (e=fct). In a word the alternating form permits the use of a greater quantity of electricity: (Q=It).

The "current sinusoidal" differs from the preceding only in that the undulation is perfectly regular without any notch. From this short description it is evident that the use of the alternating current is a thing altogether new from the point of view of electro-therapy. Also the physiologic properties of these currents are themselves new and full of interest.

Physiologic effects of the alternating current at low frequency.—The alternating current of low frequency, i.e., presenting a maximum of 20,000 per minute, has been first studied by Prof. D'Arsonval, who in his laboratory of the College of France has measured on the human subject and on animals, on the one hand the variations in the absorption of oxygen, in the production of carbonic acid; and on the other hand the modifications in the production of heat, by his calorimetric method. *Without any muscular contraction*, without any pain, it is shown that is possible to increase instantaneously by more than a quarter the activity of the gaseous respiratory changes.

It seemed probable that this powerful action on the gaseous changes would be accompanied by a correlative increase in the excrementitious products and we have in fact shown by several hundred analyses of urine that the amount of urea is always increased in a variable proportion and that it can reach double the amount eliminated before the experiment.

Besides, certain substances eliminated by the urine seem to be transformed. Thus, to cite an example, the urine no longer has the characteristic odor after the ingestion of asparagus. We are continuing our researches on this subject.

When not proceeding experimentally, there seems to be no difficulty in producing muscular contractions; on the contrary, general faradization by means of a bath modifies itself the nutritive changes, augmenting the production of heat.

The other physiologic effects are on the one hand partially those of the faradic current, on the other partly those of the continued current. Like the latter, the alternating current produces a chemic action, weaker, it is true, but very distinct; like the faradic it determines vaso-motor changes and muscular contractions.

THERAPEUTIC EFFECTS.

1. *General.*—In order to obtain the maximum effect by applying the current to the whole surface of the body we have adopted water as a conductor. The patient is plunged into a bath of lukewarm water containing starch, the starch rendering the water opaque for purpose of decency. The bath-tub may be of marble or porcelain, or of iron carefully enameled, or of wood. A series of nickel-plates (nickel to avoid oxidation) can be arranged around the inside of the tub, hung by conducting cables, isolated by rubber and provided with hooks. A system of movable plates permits the localization of the maximal action of the current and is preferable to fixed plates, difficult to cleanse. The carbon plates which we used at first are too heavy and break the threads that support them very easily.

We speak here only of the therapeutic results which we consider absolutely determined. We are studying others, as the application of electric douches to hysterical subjects, but our experiments are of too recent a date to make them worthy of mention here. Since the principal effect of the alternating current is increased action in the nutritional changes, it is rational to think that a retardation in this process, would be amenable to this treatment; and in fact arthritic subjects generally do well on it. Rheumatism in its subacute and chronic form, especially the rheumatic neurites are rapidly improved by the alternative baths.

It is, therefore, diseases of this order, characterized by a retardation in the nutritive process that have been the first to be the object of our researches. We have already made known in a certain number of previous publications the favorable results of our method of treatment. We have called attention to the good effects obtained in obesity, in chronic gouty subjects and in dyspeptics. Our attention has also been called to chronic skin diseases and especially to eczema. Eighteen cases of eczema of long standing have been rapidly improved and all had resisted numerous treatments. In a case of vitiligo we have been able to obtain a marked diminution in the dyschromatic lesion after fifty baths.

The treatment of sciatica has given results to which no other medication can pretend: fifteen cases, fourteen successful. In infantile paralysis, in pseudo-hypertrophic paralysis the improvement has been more rapid than by other electrical treatment.

Thanks to the enlargement of our electro-therapeutic laboratory, we have been able to extend the field of our researches during the past year. We have been able to treat about a hundred patients, children and adults, with anemia, lymphatism, scrofula, adenitis and rickets. We shall publish later interesting observations on the results which we have obtained. Dr. Segretti of Rome, who considers rickets as a functional derangement of the trophic nervous system which always manifests itself by the lack of calcareous salts in the osseous system, as chlorosis always manifests itself by the lack of iron in the blood, has been recommending for some time past the use of hydro-electric baths in this disease and has obtained the best results from this medication.

2. *Local Effects.*—One of the first aims of our researches was to take all the advantage possible of the use of the alternating current in gynecology. In our article read in 1891 at the Academy of Science of Paris, we called attention to the great advantages to be derived from the use of this form of electricity in the diseases of women, promising to give later the indications. Pure results obtained can be formulated as follows:

1. The alternating current is always contra-indicated when the hemorrhagic symptom is marked. It is useful in amenorrhea and dysmenorrhea.

2. In inflammations of the uterus, in fibromata, the continuous action is preferable to the alternating.

3. In inflammations of the ovaries, tubes and pelvic tissue, the alternating current has rendered such services that the other medications must give place to it.

4. When properly applied it is the treatment par excellence for pain.

These statements need explanation which will be given in extenso later.

We have already mentioned the applications of the alternating current in a large number of affections such as: Muscular atrophy, dilatation of the stomach, neuritis, etc. We add summarily that we now recommend it in constipation, hemorrhoids, engorgements of the prostate and certain forms of cystitis. In torticollis and lumbago, one sitting is usually sufficient to bring about a permanent relief.

Finally, the alternating current increases indisputably the domain of electro-therapy; as a local agent it enjoys therapeutic properties worthy the attention of electricians; its application is painless and dosage easy. Lastly in its action on those nutritive derangements which constitute the diatheses, the source of numerous chronic diseases, the alternating current is one of the greatest acquisitions of therapeutics.

Production and Transformation of the Alternating Current.—The electric energy which we use is produced by the machines of Ferranti. It is known that Ferranti has modified the Siemens' machine, which is the type of the machines with alternating currents, whose coil does not contain iron, by giving to this latter a special form presenting many advantages. This coil is constructed by winding a long copper band in a wavy curve, a sort of circular zigzag. Several of these can be superimposed, separated from each other by vegetable fiber. The two extremities of the metal end in two metallic collars on which rest friction plates (rubbing surfaces). The current engendered by the Ferranti machine comes into our cellar where it is transformed, the strength being reduced from 2,400 volts to about 110 volts. Thus transformed it is easy, by the aid of apparatus for reduction of potential of different types, to utilize it either locally or in baths, beginning with a minimum and increasing gradually to a dose that is beneficial and can be borne.

The apparatus for reducing potential consists of liquid resistances or of solenoids in the interiors of which move cores of soft iron which have the property of reducing considerably the alternating current.

The graduation of the current is obtained by means of a coil of very fine thread which can be passed more or less over another coil which is directly connected with the potential reducer.

Alternating Current with High Frequency.—We only recall to memory the well-known experiments of Tesla and E. Thomson, not dwelling on them. After the demonstration of Tesla at Paris and the conferences of Prof. d'Arsonval, having obtained sufficient knowledge of these currents, we tried for a year and a half to render them utilizable in medicine.

The method used for demonstration and in laboratories is lacking in one essential quality for current usage; it is not practical. As well known, we use piles or accumulators as the source of the current, as a transformer we use Ruhmkorff's coil. Now, on the one hand, the source is exhausted too rapidly, hence the necessity of constant and troublesome changes; on the other hand, the vibrator of the coil soon gets out of order. These defects in apparatus have permitted us to pursue our experiments only intermittently.

The solution for us who had at our disposal the alternating current of the city, was to use this. Unfortunately all the transformers which we applied to this current either did not give sufficient voltage or became heated after a few minutes trial. It is only after all these trials that we, with the aid of the firm Ducretel, have succeeded in finding a coil which works perfectly. This coil gives a transformation of 1-100. Its inductor is composed of three layers of copper thread of 22-10=531 turns; its length=48 cm.; weight of thread = 2.900 kilos, (6 lbs), its resistance = O, 57 ohm. Its induced coil is composed of fifty layers of copper thread of 21-100 = 53,000 turns. Weight of copper thread = 5.200 kilos; its resistance = 8,600 ohms.

The current which we have under 100 volts traverses at first a series of coils of resistance, arrives at the transforming coil, whence, like d'Arsonval, we let it pass through a battery of Leyden bottles to end either in a final transformer plunged into oil or in a solenoid in the center of which the patient is placed.

Our experiment is too recently completed to have made its application to patients possible as yet.

From an experimental point of view, we have been able to reproduce all the experiments of M. d'Arsonval; to light a lamp held in the hand, the current passing through the human body without being perceived, provided that the conductor fixed to the wires attached to the lamp is of sufficient surface; to prove the local anesthesia which is produced by this imperceptible current and the accompanying vaso-motor dilatation, etc. When the person is touched at one of the poles, the other being in connection with the ground, a short spark and local heat is observed.

In the solenoid when the vibrations are extra rapid and with a spark from the condensers of three millimeters at least and very bright, a sort of general vibration is felt. Under these conditions a lamp held simply between the hands is lighted. We propose next to try the treatment on hysterical subjects, with the coöperation of M. Gilles.

(To be continued.)

NECROLOGY.

G. V Ewing, M.D. of Ogden, Colo.

Butler E. Turrill, M.D. February 24.

G. Wyman, M.D. of Topeka, Kan., March 3.

W. C. A. Banes, M.D., New Albany, Ind., March 6.

H. S. Stimson, M.D., of Athens, Ohio, February 25.

R. H. Johnson, M.D. of Atlanta, Ga., February 19.

H. W. Simmons, M.D. of Conneaut, Ohio, February 19.

C. Loftus Martin, M.D. of Janesville, Wis., February 24.

H. K. Porter, M.D. of Duluth, Minn., March 2, aged 30 years.

Dr. Stevens of Windsor, Ohio, February 9, aged 90 years.

C. L. Martin, M.D. of Janesville, Wis., February 23.

James Shook, M.D. of Chillicothe, Ohio, February 18.

W. B. Lapham, M.D. at Togus, Maine, February 21, aged 66 years.

G. W. Norton, M.D. of Earlville, Ill., died March 2, aged 80 years.

Henry B. Mathiot, M.D. of Smithfield, Pa., died Feb. 24, 1894, after a brief illness in the 79th year of his age.

De Casper Vitzhum, M.D., formerly of Moline, Ill., died February 24, aged 71.

J. C. James, M.D. of Bradford, Pa., February 25, aged 42. He was a graduate of Bellevue Medical College, New York.

J. C. Snavely, M.D., ex-President of the Lancaster County Medical Society, and ex-member of the Legislature, at Manheim, Pa., February 26, aged 75.

E. E. Hutchins, M.D. of Clyde, Ohio, was killed by the explosion of a new self-lighting kerosene lamp, February 28. He was a graduate of Jefferson Medical College, and was 48 years of age.

N. G. Thompson, M.D. died suddenly of heart disease at Coatesville, Pa., March 1. He was one of the best known physicians in Chester County, and was a graduate of the Philadelphia Medical College, class of 1852, and for forty years successfully practiced his profession at Brandywine Manor. Tiring of country life two years ago he removed to Coatesville, where he erected a handsome residence.

Charles H. Bressler, M.D. died at York, Pa., February 21, aged about 72 years. He was stricken with apoplexy about ten days before and had been slowly sinking ever since. Dr. Bressler was always prominent in Republican politics, having been a candidate several times for Congress in this district, and also was several times a candidate for Congressman-at-large. He was appointed by Governor Curtin Sheriff, to fill the vacancy caused by the death of Sheriff

Wolfe. He was a member at times of the City Council. He was a consistent member of the Methodist Church, and also of the Masonic fraternity.

Bernard Segnitz, M.D. of New York died February 23. Dr. Segnitz was 84 years old and was one of the best known German physicians in this country. Among his writings are "The Physician and His Work," "Mortality Versus Progress" and "Fashion and Medicine." He recently invented an inhaler for use in diseases of the respiratory organs, and was engaged in perfecting it when the stroke occurred that caused his death. He had been House Physician to Baron Mayer, Carl von Rothschild and Prince Isenberg Birstein. His fame in Germany grew rapidly, until he took a stand against the Government and became a political refugee. Dr. Segnitz was a strong advocate of the prohibition of marriage to consumptives.

Joel Seaverns, M.D. of Roxbury, Mass., died March 1. Joel Seaverns was born at Jamaica Plains, N. Y., May 25, 1828. At the age of 18, he graduated from the Roxbury Latin school. Leaving college in 1850, he spent one year in teaching, when he entered the Harvard Medical School, from which he graduated in 1854. Commencing private practice then at Jamaica Plains, he continued there until May 25, 1862, when he entered the Army as Acting Assistant Surgeon, holding this position until Dec. 4, 1863, when he was appointed Assistant Surgeon of U. S. Volunteers, and promoted March 30, 1864, to the rank of Surgeon. In 1865 he was made Brevet Lieutenant-Colonel for faithful and meritorious service. His first two commissions were signed by Abraham Lincoln and his last by Andrew Johnson. During his army life he was Surgeon-in-Charge of hospital ship, the *New World* and of steamer *De Molay*. Before and after that time he was Post Surgeon at Fort Warren in Boston harbor.

Michael Jean Baptiste Messemer, M.D. died at Mentone, France, February 21. He was born in New York City of German and French parents, forty-five years ago. As a boy he attended a Roman Catholic parochial school, and before he was of age he graduated from St. Francis Xavier's College. Later he studied law for two years, but he decided not to be a lawyer, and began the study of medicine. In 1885, he was graduated from the College of Physicians and Surgeons. Before he had gained much of a practice at his office in Second Avenue, he began to take an active part in politics, and in 1881 he was appointed a deputy coroner by Coroner Merkle. He was elected coroner before the expiration of Merkle's term of office to succeed him, and he was reëlected in 1887 and in 1890. He was large and stout, with ruddy face, blue eyes and large flowing sidewhiskers. His congenial habits made him popular with his Tammany supporters. He was a bachelor and belonged to many clubs. He also held memberships in several medical societies, and in the Liederkranz and Arion Societies, and was physician to the outdoor poor department of Mt. Sinai Hospital. His last term of office as coroner did not expire until Dec. 31, 1893, but he performed no duties connected with his office for many months previous to that time.

Paul Diday, M.D.—In M. Diday, who died a short time ago at the age of 83, Lyons loses one of its leading surgeons and the medical profession in France one of its most distinguished members. Born at Bourg in 1812, he studied medicine in Paris, where he was a favorite pupil of Dupuytren, and afterward of Ricord. Soon after taking his degree he became surgeon to the Antiquaille Hospital at Lyons, a post which he continued to fill for many years. It was largely owing to his influence that this institution was transformed from a mere special hospital into a school of scientific syphilography, where much work of the greatest value was done by Diday himself and his pupils.

Early in his career Diday was appointed General Secretary of the Lyons Société de Médecine. Into the duties of this office, which he held for thirty-four years, he threw himself with the greatest enthusiasm. He was one of the founders and the first editor of the *Lyon Médical*, and for twenty-five years he was a constant contributor to its pages. He also wrote largely, though anonymously, in the *Gazette Médicale de Paris*. His literary activity was extraordinary, and continued to the end, a paper from his pen on the expediency of subjecting a primipara, presumed to be syphilitic, to mercurial treatment having appeared in the *Lyon Médical* on December 24.

Of his books the best known are the *Traité de la Syphilis des Nouveau-nés et des Enfants à la Mamelle* (1854), *Histoire de la Syphilis* (1863), *Therapeutique des Maladies Vénériennes* (1876) and *Pratique des Maladies Vénériennes* (1886). At his best Diday was a brilliant writer, incisive, epigrammatic and exquisitely lucid.

Diday had suffered for some time from an affection of the bladder, for which he was successfully operated on (a fact which he commemorated in verse only a few weeks ago). His death appears to have been due to a tumor of the chest wall which was discovered quite recently; it proved fatal by extension into the pleural cavity. He was buried on January 11 in the presence of an immense concourse of his professional brethren and friends, including all the academic and official notabilities of Lyons.—*British Medical Journal.*

The Numbers of the Profession.—The Medical Directory for 1894, now published, gives the following as the numbers of the medical profession for the year 1894: In London, 5,590; in the provinces, including Wales, 14,897; in Scotland, 3,107; in Ireland, 2,485; registered practitioners resident abroad, 3,209; Naval, Military and Indian Medical Services (excluding those which appear also in other lists), 2,426; "too late" list—additional names, 58. The total number of practitioners in the "Directory" for 1894 is 31,772, as against 30,759 in the previous year. This shows an increase in the twelve months of 1,013. The obituary list, which seems to be wonderfully complete, gives the deaths as 639. The above figures give one medical practitioner in London for every 750 of the population; in the provinces, one in 1,650; in Scotland, one in 1,300; in Ireland, one in 1,900; and in the United Kingdom generally, one in 1,450.—*The Lancet.*

The Statistics of the Medical Profession in Austria.—According to the official statistics published recently there were in Austria, 6,057 physicians holding the diploma of M.D. in the year 1891, and 6,565 in 1892. In the former year there were also 1,588 surgeons of the old surgical schools, but in 1892 this number had been reduced by death to 1,582. The total number of medical practitioners in Austria in 1892 was 8,097 against 7,645 in 1891. The figures for 1893 have not yet been published.

The Medical Profession in Italy.—According to the *Annuario Statistico Italiano* for 1892, just issued under the authority of the General Direction of Statistics at Rome, the total number of medical practitioners in Italy in that year was 19,120, being a proportion of 6.2 per 10,000 of population. The ratio varied in different parts of the Kingdom from 11.1 per 10,000 in sixty-nine chief towns of provinces to 5.3 in the rural communes. The following figures show the numbers of practitioners and the proportion to population per 10,000 in several of the principal cities: Rome, 510 (11.6); Naples, 1,506 (28.3); Milan, 374 (8.8); Turin, 292 (8.8); Palermo, 225 (8.2); Genoa, 255 (12.0); Florence, 258 (13.1); Bologna, 144 (10.2); Venice, 127 (8.5); and Catania, 114 (9.5). Between 1878 and 1892 the absolute number of doctors increased by rather more than 1,000 (19,120 as against 18,044), but the relative number decreased from 6.5 to 6.2 per 10,000 of population.—*British Medical Journal.*

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SATURDAY, MARCH 17, 1894.

MEDICAL EDUCATION IN THE UNITED STATES.

Report of the Illinois State Board of Health on Medical Education and the Regulation of the Practice of Medicine in the United States and Canada. Revised to Jan. 1, 1894.

In an address delivered before the Section on Pedagogy of the Pan-American Medical Congress,[1] by J. COLLINS WARREN, M.D., President of the Section, the speaker took occasion to pay the following tribute to the Illinois State Board of Health: "The reports on medical education by the Illinois Board, I do not hesitate to say, have exerted a more powerful influence on the movement in education than any other publication which our medical literature has produced."

The latest volume of this series, recently completed for the Board by its former Secretary, DR. F. W. REILLY, presents a collection of facts and figures which seem to fully justify DR. WARREN'S recognition of the value of these publications. The reports were projected in 1880 by DR. JOHN H. RAUCH, member, President and Secretary of the Board from its organization in 1877 until 1891, and the eight volumes prepared by him are a monument to his ability, sagacity and untiring zeal in the cause of higher medical education. A brief summary of what has been accomplished by the Board, directly through its own action and mediately through the influence of these publications, can not fail to be of interest:

The Illinois Medical Practice Act of 1877 empowers the State Board of Health to determine the "good standing" of any medical college whose diploma may be presented to the Board as the basis for the license or certificate authorizing the practice of medicine and surgery in the State. The necessity of some standard by which to determine this point was soon apparent, and the Board early in its existence addressed itself to an investigation of the methods and character of instruction in vogue among the medical schools of the period—the requirements and conditions upon which they conferred the degree of Doctor of Medicine upon their students.

Of the 57 institutions in the United States whose diplomas had been presented to the Board prior to October, 1880, and which thus became the legitimate subjects of this investigation, there were 43 regular schools, 10 homeopathic, 3 eclectic and 1 physio-medical. It was found that qualifications for matriculation were exacted by only 15 of the total 57 schools —14 regular and 1 homeopathic; in the remaining 42 schools no evidence of preliminary education was required before students were permitted to enter the lecture room. By 30 of the 43 regular schools, 8 of the 10 homeopathic and the 3 eclectic schools the degree of M.D. was conferred after two years of study and attendance upon two annual courses of lectures of an average duration of 22.6 weeks—included in the two years of study. Only 13 regular and 2 homeopathic schools required three annual courses of lectures and three full years of study before graduation. More than half the regular schools had lecture courses averaging less than 20 weeks duration.

After a careful study of the facts disclosed by this investigation the Board framed a schedule of requirements for medical colleges which desired to be recognized as in "good standing." This schedule prescribed certain matriculation qualifications; the branches of medical science to be included in the curriculum of instruction; the duration and number of lecture terms; the percentage of attendance upon lectures, recitations and quizzes; the amount of dissection to be performed and of attendance upon clinical and hospital instruction; the period of study; the character of the corps of instructors and of the teaching equipment. This schedule was promulgated in 1880, and the Board announced that, after the sessions of 1882–83, it would recognize no college as in "good standing" that did not conform to these requirements.

The following table shows to what extent this schedule was complied with during the next three years:

Requirements of Colleges in 1880 and 1883	Regular.	Homeopathic.	Eclectic.	Percentages of Totals.
Colleges listed by the Illinois Board in 1880	43	10	3	. . . .
Colleges listed by the Illinois Board in 1883	91	13	5	. . . .
Colleges exacting matriculation qualifications in 1880	14	1	0	26.8
Colleges exacting matriculation qualifications in 1883	61	11	7	66.4
Colleges requiring attendance on three courses of lectures in 1880	13	2	0	26.8
Colleges requiring attendance on three courses of lectures in 1883*	16	2	0	15.1
Colleges requiring three full years of study in 1880	13	2	0	26.8
Colleges requiring three full years of study in 1883	68	2	1	59.6
	Weeks.			Gen. Aver.
Average duration of lecture terms in 1880	22.8	22.7	22.0	22.5
" " " " in 1883	24.4	23.7	20.9	23.0

[1] Journal Amer. Med. Ass'n, Sept. 9, 1893.

* In the following year, 1884, these figures changed to 79 out of 87

Following are the figures for 1893:

Total number of existing medical colleges in the United States January, 1894 136
Number exacting matriculation qualifications 131
Or 96.3 per cent. of the whole number.

All of the 19 homeopathic colleges, the 8 eclectic and 104 out of 109 regular colleges now require some sort of preliminary education before admitting students to the lecture classes. The five exceptions are the Medical College of Georgia, the Atlanta (Ga.) Medical College, the Southern Medical College of Atlanta, the North Carolina Medical College (newly organized) and the University of Virginia Medical Department.

The proportion of schools requiring attendance upon three or more courses of lectures before graduation has also risen from 26.8 per cent. in 1880 to 96.3 per cent. in 1893. There are now 11 regular schools and 1 homeopathic that require attendance upon four annual courses of lectures; and 45 regular, 17 homeopathic and 6 eclectic schools require four or more full years of study before graduation. No school required four courses of lectures or more than three years of study in 1880 or in 1883.

The only schools which still graduate upon two courses of lectures are the Atlanta Medical College, the Baltimore Medical College, the University of Virginia, the Medical College of Virginia and the Georgia College of Eclectic Medicine and Surgery. The Georgia schools still adhere to the system of repetitional lectures; in all other cases, with the exception of one newly-organized homeopathic school, the lectures are graded.

In 1880 the average duration of the lecture term was a fraction over 22 weeks; of the 56 colleges examined, 38 had terms of less than 24 weeks and 18 had terms of 24 weeks or more. During the current sessions, 1893–94, the average duration of the lecture term is 28.19 weeks; only 10 schools have terms of six months or more.

In 1884, immediately following the enforcement of the Illinois Board's schedule of minimum requirements, there was an extinction of 4 regular and 3 eclectic, and the number of regular schools did not again reach that of 1883 until 1888. The eclectic schools have steadily diminished in number from 15 in 1883 to 8 in 1893, while the homeopathic schools have increased from 10 in 1882 to 19 in 1893.

Missouri and Ohio are the most prolific States in the Union as to medical-diploma issuing institutions. Each has 16 existing medical colleges—Missouri, 12 regular, 2 homeopathic, 1 eclectic and 1 miscellaneous; Ohio, 11 regular, 3 homeopathic, 1 eclectic and 1 miscellaneous. Since 1840 Missouri has had 38 schools—25 regular, 9 homeopathic, 2 eclectic and 2 miscellaneous; since 1819 Ohio has had 42–20 regular, 6 homeopathic, 7 eclectic, 9 miscellaneous.

regular schools, 13 homeopathic and 7 eclectic, which required attendance upon three courses of lectures before graduation, and the percentage of schools requiring attendance upon three courses of lectures rose from 26.8 in 1880 to 88.3 in 1884.

The fluctuations in the numbers of regular, homeopathic and eclectic medical colleges since 1882 are shown in the following:

Years.	Schools.			Totals.
	Regular.	Homeopathic.	Eclectic.	
1882	78	10	10	98
1883	91	13	15	119
1884	87	13	12	112
1885	89	13	11	113
1886	90	13	10	113
1888*	91	14	10	115
1889	101	14	9	124
1890	111	13	9	133
1893†	109	19	8	136
Net gains	31	9	. . . . .	38
Net losses	. . . . .	. . . . .	2	. . . . .

THE MICROBIC DISEASES OF THE NERVOUS SYSTEM.

The microbic or, to speak more exactly, the infectious diseases of the nervous system at present recognized are very few in number and this recognition is, except in the case of hydrophobia, entirely a matter of recent date. Even now, if we except tetanus, rabies, diphtheritic paralysis, cerebro-spinal meningitis, certain forms of neuritis, one or two tropical disorders and the tubercular affections, a spinal infectious etiology is not generally admitted. Perhaps we ought to add tabes and paresis to this list in view of their probable specific origin, and there are one or two affections such as LANDRY'S paralysis that stand as yet in an undetermined position in this respect. Apart from these forms any infectious nature of diseases of the nervous system is seldom admitted.

It is a question, however, whether we may not, in the near future, have to enlarge our ideas to some extent, and put poliomyelitis, syringomyelia, and possibly gliomas in general into this category. It is just probable that even some of the disseminated scleroses and paralysis agitans may be found to have special germs that cause their appearance and may have to be classed with the microbic diseases. Suppurative inflammations wherever they occur, whether within the cranium or elsewhere within the nervous system, are in all probability attended with the usual organisms of suppuration, and it seems probable from certain observations that have been reported, that other microörganisms than those usually found may sometimes be their exciting causes. The nervous system, protected and resistant as it is, presents constantly points of weakness which the roving microbes in the system may attack.

It is a rather significant fact as regards the future that tetanus, the one purely nervous disorder that is a typical bacillary disease, has only been recognized as such within the past few years. It is not altogether improbable that discoveries as striking as that of NICOLAER'S bacillus will yet be made in the pathology of diseases of the nervous system; the

* No report published in 1887. † No reports published in 1891-92.

possibilities are not exhausted, indeed, we are probably only at the threshold of the investigation.

Setting aside the necessity of specific microbes, and admitting only a toxine action we find that the latter plays a most important part in these disorders. The number of nervous structural diseases that follow acute infectious fevers is in evidence, to say nothing of the known effects of such agents as alcohol, lead, mercury, and other mineral and organic poisons. The nerve centers are influenced from every part of an organism, which has been truly called a laboratory of poisons, and every failure in their elimination through disturbances of function reacts at once upon the brain and cord. The recent discoveries in regard to the thyroid gland are in evidence here, to say nothing of the long known effects of disorders of the organs of excretion. The part played by toxines in the etiology of these diseases is one of the most important if not actually the predominant element of their causation.

IMMIGRATION STATISTICS.

The United States Commissioner of Immigration at New York in a recent report states that there were 352,885 immigrants received into the United States during the year ended Dec. 31, 1893.

The comparative figures of the six leading nationalities are as follows: Italy, 69,074; Germany, 55,981; Russia, 37,100; Ireland, 30,236; Sweden, 28,965; Austria, 28,872. The number of illiterate, those who could neither read nor write, was 52,919, and of these Italy furnished by far the largest number with Russia a close second, while only 530 out of the nearly 29,000 Swedish immigrants did not have the rudiments of an education.

Thus we have more than fifty thousand illiterates added to our population who are practically certain, sooner or later, to become inmates of our charitable institutions, and nearly the whole number will be added to the already large class of persons seeking employment. In ordinary times this mass of humanity could be taken care of with comparative ease but at this time, when there is much suffering and too little work, it is not doubtful that a temporary suspension of immigration would be in the common interest of intending immigrants, not less than in the interest of those already among us.

REGARDING THE PRACTICE OF MEDICINE IN KENTUCKY.

The Kentucky State Board of Health has succeeded in removing nearly all the opposition to the new law regulating the practice of medicine in that State. The courts have sustained the validity of the Act, and the Legislature which has just adjourned was in thorough sympathy with the manner in which it was enforced. One of the results is that now they do not have an advertising or traveling doctor in the State. The COPELAND advertisers that infest so many of the States, made a strong fight, and were the last to surrender and leave the State. Kentucky is to be congratulated.

AN EXPLANATION.

The *Pittsburg Medical Review* in an ill-natured commentary on Dr. COHEN'S letter lately published in this JOURNAL, refers to our foot-note that the letter was "published by order of the Trustees." That foot-note simply meant that as the article was an attack on the Board it was only printed by their own order.

CORRESPONDENCE.

"The Code."

To the Editor:—Doubtless there are many good men in favor of revision, but I believe each of these good men will admit that they have been benefited by adhering to the Code, and I believe that most of these good men will say that no man was ever injured in reputation by adhering to the Code. Now if it is true that the Code will benefit all of its adherents and at the same time injure none of them, it ought not to be changed in any way. Ever so small a change in a *perfect* instrument may make it useless. When a patient is doing well on any special treatment, the prudent doctor will hesitate before making a change. The same principle applies in all things. *Sometimes* a change makes the patient improve faster, but this is the exception, not the rule.

The strongest reason outside the above, why the Code should not be changed is, that the enemies of the ASSOCIATION and regular medicine are clamoring for a change. Editors of medical journals who interleave their pages with such nostrums as "Cactina Pillets," "Vinola Cream," "Malto Yerbine," "Sing," "Chionia," "Sanmetto," Terraline," "Uric Solvent," and the host of nondescript compounds, have no use for a code. They claim that the "Golden Rule" is a sufficient code. So it is, but if a man will knowingly violate the present Code every day of his life, is there any hope of that man's adhering to the Golden Rule? The Golden Rule without penalties for its violation or rewards for its fulfillment would be a dead letter.

The irregulars have made war upon regular medicine for the past century. They have told the people that regular medicine was a "humbug" and none but the "reformed" men were doctors. The men who never use "calamy" (calomel) or other minerals; the men who claim that venesection is a crime and who give little doses of pleasant medicines were the ones to employ. Not satisfied with telling what they knew was false, they now have the "cheek" to ask regulars to change their rules of action (their Code), that they (the little pill men) may unite with us. What for? If we are humbugs and commit crime by our methods of practice why do they want to join our ranks? Why do they not keep themselves "unspotted from the world?" They call us all manner of mean names and then ask us to meet them in consultation, and because we refuse they are furious and want us to change this part of our Code. Shall we do it? I say, no. We have prospered wonderfully under the present Code, we are decidedly "on top" in every branch of medicine. Why should we step down and out and let our enemies dictate what is best for us? If they are so "tony"

and can do so much better by their patrons than we can, why do they not take the advice of the Kentucky doctor, who advised them to roost where they belonged? Surely we do not need them nor their suggestions. There has been a hue and cry for *union, union, union*. Union of what? Regular and irregular medicine? "No sir-ree." These are incompatible. They might make a *mixture* but no solution. The mixture would kill the ASSOCIATION so dead that the buzzards would not eat. The next meeting of the ASSOCIATION will be in a place where it will be costly for many to attend, and there will be a strong effort made to revise the Code. It is to be hoped that every member of the Society who can will be present and do all he can to prevent any legislation that has for its object the union of regular medicine with quacks. Write up your objections and send them to the JOURNAL. Show the rascals up in their proper colors, and instead of making a change in the Code whereby these high-toned gentlemen can be admitted, make it more difficult for them to enter. Let it be universally understood that no vendor of nostrums need apply. I am sorry I can not paint them in more natural colors.

Very respectfully submitted,

W. P. HOWLE, M.D.

Tscherning's New Theory of Accommodation.

PARIS, Feb. 22, 1894.

Dear Doctor:—I have been told by Dr. Javal and others that Tscherning's theory of accommodation has not yet been published in the English language, inasmuch as it has just appeared for the first time in the *Archives de Physiologie*, published in Paris. I therefore thought that it might be of interest to the medical profession in America. I shall not undertake to give a complete exposition of this theory, but only a brief resumé of its most important features. I will say, however, that the conclusions to which Dr. Tscherning has arrived have been the outgrowth of a vast deal of very careful study in the laboratory of Javal in the Sorbonne, and from my limited personal acquaintance with him I would judge that his inquiries have been conducted in the proper spirit of scientific investigation. His numerous experiments on the lower animals and his accurate observations on the human eye by the aid of the aberroscope and ophthalmophakométer (specially devised by him) have furnished him with the data upon which he has founded his new theory of accommodation in opposition to the well-known theory of Helmholtz which has existed so long. According to the latter the increased refractive power of the eye during accommodation depends upon a relaxation of the suspensory ligament which allows the lens to assume a more spherical form, and that this relaxation of the suspensory ligament is brought about by the contraction of the ciliary muscle. Now Tscherning's view is quite different from this. He holds that *one* action of the ciliary muscle is to render *more tense* the suspensory ligament, thus giving to the lens by an active and not by a passive process a form which is responsible for the augmentation of its refractive power. Tscherning's theory seems to explain not only the mechanism of refraction in the human eye but also is applicable to the various modifications of refraction observed in the lower animals. For example, in the case of fishes the crystalline lens is perfectly spherical in a state of repose and hence could not become more spherical during accommodation, which would be required by the theory of Helmholtz if his theory is universal.

The following is a resumé of Tscherning's conclusions:

1. During accommodation the summit of the anterior surface of the lens remains almost stationary.

2. The anterior surface of the lens during repose resembles the surface of a sphere, but during accommodation it approaches that of an hyperboloid of revolution.

3. During accommodation the peripheral parts of the anterior surface of the lens are flattened, and the central parts become more convex.

4. During accommodation the refractive power of the anterior surface increases throughout, but especially towards the middle.

5. The spherical aberration diminishes during accommodation on account of the flattening of the peripheral portions.

6. The central part of the lens increases in thickness on account of the flattened peripheral portions.

7. The rate of curvature of the posterior surface of lens increases a little at the center.

8. The lens recedes a little, at least in certain cases.

9. The pupil contracts. The contraction commences a little after the change in the lens. During this contraction even the most peripheral parts of the iris take on a centripetal movement which does not occur after a simple incidence of light.

10. The plane of the iris changes. The central parts and the peripheral parts remain in the same plane, but the intermediate parts undergo a slight depression.

11. The ciliary processes advance slightly towards the axis of the eye.

12. The choroid is drawn forward.

13. The tension in the anterior chamber is diminished.

Without attempting to decide as to the value of these observations, I simply present them as being, in my opinion, worthy of consideration. Very sincerely,

JNO. MCREYNOLDS, B.S., M.D.

To Dr. R. H. CHILTON, Dallas, Texas.
Dallas, Texas.

Not Persons but Principles; Not Words but Actions.

PHILADELPHIA, Feb. 20, 1894.

To the Editor:—Your correspondent, "Constancy," objects to the language in which I criticised the action of the JOURNAL in disobeying the order of the ASSOCIATION and the provision of the Code prohibitory of nostrum advertising. I am unaware of anything "unprofessional" in my remarks,—but, be that as it may, if my letter is worth noticing at all, the question is not as to the literary merit of my style, but as to the justness of my contention; not as to my words but as to the Trustees' acts. While I am perfectly willing to be criticised, I do not desire to obtrude, or have others obtrude, my personality into what should be a discussion of principles. Let us avoid side issues of all kinds and stick to the main point.

The facts are undisputed, that: 1, the Code and, by resolution at Detroit, the ASSOCIATION, have prohibited the advertising of nostrums (i.e., secret preparations) in the JOURNAL of the ASSOCIATION; and 2, the JOURNAL, notwithstanding this repeated prohibition, does publish such advertisements. I would therefore respectfully ask "Constancy" for a direct answer to the following question: "Is the JOURNAL justified in publishing advertisements of nostrums?"

Yours truly, S. SOLIS-COHEN, M.D.

The Advertising War.

CHICAGO, March 6, 1894.

To the Editor:—I write simply to indorse in their *entirety* the contents of Dr. Solomon Solis-Cohen's letter published in the issue of Jan. 20, 1894, of the JOURNAL, with reference to *nostrum* advertising. Unlike "Constancy," I see *nothing* undignified about Dr. Cohen's letter. It is precisely the

attitude of "Constancy," that is, one of timidity as to the statement of the bare truth, that is threatening the overthrow of medical ethics. There is no doubt that a lukewarm consideration of the subject makes the enemies of medical ethics still bolder.

My individual opinion on the matter at issue has already been expressed elsewhere, and now I only desire to be placed on record as indorsing every sentence of Dr. Cohen's letter.

Very truly yours, DAVID CERNA, M.D.

LETTER FROM EUROPE.

Major Girard, Surgeon U. S. Army, to Professor Senn.

No. III.

HEIDELBERG—PROFESSOR CZERNY — STRASSBURG — PROFESSOR LUECKE—PROFESSOR VON RECKLINGHAUSEN—BALE—PROFESSOR SOCIN.

HEIDELBERG, Feb. 14, 1894.

Dear Dr. Senn:—The purpose of my visit to Heidelberg was to see Professor Czerny and observe the management of his clinic. If I am a little disappointed I must ascribe the major cause to the miserable weather and lack of expected news from home, both of which will to a certain degree affect even a stoic. Perhaps, to the taste of the distinguished Professor, I was not a big enough personality, and when on inquiry, if I was a Surgeon-General, I replied in the negative I thought I perceived a shade of difference in manner, all of which may be a result of my mental depression and goes to show that, even with the most honest intentions, reports of clinics depend to a certain degree on the mental condition of the writer.

Professor Czerny is one of the foremost of German surgeons, and is spoken of as the successor of the lamented Billroth. He is said by his assistants to have deprecated any intention of leaving Heidelberg, a view ardently indorsed by those who well know that with him one of Heidelberg's brightest stars will leave; but it stands to reason that he can not refuse one of the greatest chairs in Germany (including Austria among the German-speaking universities). The present operating room of the clinic is very antiquated and will be replaced in May by one in course of construction, of which anon.

While the cases presented in the clinic were not of the brilliant kind, they still conveyed valuable lessons. A woman with a synovitis of the knee joint of a metastatic nature, in consequence of an attack of quinsy, had been aspirated some weeks ago and allowed at once to return to her home. Result: Severe inflammation. The lesson conveyed was that an aspiration should not be considered a slight operation and absolute immediate rest in bed must be insisted on.

A case of non-venereal multiple papillomata of penis and scrotum was operated on by one of the assistants with scissors and the Paquelin knife, while the Professor proceeded to operate on the case of the day. A boy of about 18 had been suffering with tubercular perforation of the squamous portion of the temporal bone and of the mastoid process, both of which were in communication with the external meatus. Gradually cerebral symptoms set in, leading to the suspicion of pyemic infection and thrombosis of the sigmoid sinus. With chisel and gouge the canal of the sinus was laid open, without revealing the expected thrombus. The operator then dissected down to the internal jugular and found no evidence of thrombus there. He was certain of the presence of a pyemic focus somewhere, but deemed ligation of the jugular or further investigation unjustifiable and the prognosis more grave on account of his inability to locate the trouble.

The wards of the surgical clinic are built on the two story pavilion system, eight in number, each abutting on a central corridor, and accommodating about forty public patients and some private ones. The new operating amphitheater is at the end of this corridor and has on its lower floor rooms for the surgical policlinic, and on the second one, beside the large operating room, the office of the Professor and several rooms for special examinations such as ophthalmoscopy, cystoscopy, etc. The operating room faces north and, as far as illumination is concerned, combines the advantages of Würzburg and Göttingen.

STRASSBURG.

I visited Prof. Luecke at his clinic.[1] The buildings pertaining to the clinical departments of the University have all been built, with the exception of the internal clinic, since the Franco-Prussian war, and are beautiful structures and in every way equal to those heretofore described in other places. Asepsis is carried out so scrupulously in Luecke's clinic that visiting physicians, who in the area are more or less in contact with the operating paraphernalia, are invested with operating aprons and sleeves, a good precaution no doubt. Ether has been introduced in this clinic for several months. Fearlessness of the results has, in my opinion, led to the practice of too profound an anesthesia, approaching asphyxia, and sooner or later fatal cases will be reported which will unjustly be attributed to ether—it should be abuse of ether.

The first case, enucleation of a large lipoma of the occipital region (large orange), calls for no special remark. Prof. Luecke operates rapidly and nervously and his assistants have no easy task.

The next case was a suicidal attempt of an actor—three pistol wounds inflicted with a small pistol on right temple and forehead. Two bullets were found flattened against the temporal bone, without injury to the osseous tissues (!) The third entered the right supra-orbital arch, under which it passed to the right frontal sinus, which it entered. The opening was enlarged with the chisel, but the bullet was not found. The usual packing with iodoform gauze terminated the operation. A Nélaton probe, which would have found special application in this case for location of the bullet among the osseous tissues, had unfortunately been mislaid and was not available.

The third case was a tubercular abscess over the ninth rib of the right side. After incision and evacuation a small focus was discovered, which was cut out with the spoon. I remarked, that Prof. Senn did not believe the spoon sufficient to prevent recurrence, upon which (possibly it might have been done without it), subperiosteal resection of the rib through sound tissues with the bone forceps was immediately performed. Prof. Luecke agreed entirely with your views on the subject.

To-day I witnessed an operation for removal of a goitre, which by compression of the trachea threatened the life of the patient. The tumor being almost solid was not suitable for Socin's enucleation, and it was removed *in toto*. The only point of importance was that the anterior superior thyroid artery was enormously distended, and being incised caused an extraordinary hemorrhage, which left the patient pulseless without alarming the operator, who as sole measure of restoration ordered hypodermic injection by hydrostatic pressure of the 3 per cent. solution of sodii chlorid with perfectly satisfactory results, since the patient was restored to consciousness by the time the various ligatures had been applied.

I learned various points of Prof. Luecke's methods in conversation, when he very kindly made the rounds of his clinic

[1 The press dispatches announce the death of Prof. Luecke February 20. The clinic here reported by Major Girard must have been one of his last.—EDITOR.]

with me. The same obtains here as at other similar institutions in Germany, i. e., the director of the clinic, meaning the professor of surgery, selects the cases for admission. The patients generally pay two marks (50 cents) a day and in exceptional cases only are admitted gratis.

Prof. Luecke rarely resorts to extra capsular resection of the head of the femur for cavities. He cuts the upper rim of the acetabulum from an interior incision and either removes the head inside the capsule with the chisel or only the diseased parts with the sharp spoon. I saw several cases which made an excellent recovery with free motion of the joint.

He exhibited to me his modification of Glück's method in pseudarthrosis and arthrodesis. Glück drives a hollow ivory nail with lateral perforations into the medullary canal of each of the bones to be united and connects them with a screw peg. Luecke, finding that this peg produced an impassable bridge for bone formation, does not attempt bringing the two hollow pegs forcibly together, relying for this on the elasticity of the muscles and only prevents lateral displacement by the introduction of a central peg, like the pencil in a pencil holder. I saw a foot which had been operated on in this manner a few days ago for paralytic varus, the joint surfaces having first been denuded. It appeared already fairly solid.

A little boy with gastrostomy with valvular opening was cheerfully perambulating the ward. Three children had been successfully operated on in this manner during the year and in all three cases lye was the irritant which brought about the stenosis of the esophagus. Dilatation from below was not attempted.

I met in Strassburg in the Pathological Institute Professor von Recklinghausen, who was first assistant to Virchow, when I made my studies there in 1859 and 1860. His pathological establishment is on a large basis, the collection very rich and, no doubt, would offer a splendid school for Americans, who desire engaging in that particular study.

My next stop was in Bâle, where my principal purpose was to visit the clinic of Professor A. Socin, who had been my teacher thirty years ago. He is rated among the prominent surgeons of Europe. I found him as fresh as ever, a painstaking, thorough clinical teacher and a fearless, but careful operator. His clinic was in proportion to the number of students in the University very well attended, better than any of those I had visited heretofore. His plan is to operate as little as possible during the hours of clinic, but to present the cases and submit them to an exhaustive clinical analysis, during which the "consulting staff" have no easy time, but are induced into methods of careful reasoning and defense of views.

Among the cases I witnessed in the clinic I will mention a hydrocele combined with irreducible inguinal hernia. The canal was opened by an incision extended down to the scrotum, the hernia liberated and reduced into the peritoneal cavity, without attempt at radical cure. The hydrocele was treated according to Volkmann's method, incision, ablation of part of the walls of the sac, suture of sac with external integument, application of a solution of carbolic acid, and then again suture of the scrotal wound. I relate the disposition of the hernia as a matter of observation.

The next case was a recurrent carcinoma of orbit, necessitating the removal of the margin with chisel and gouge. The wound was packed with iodoform gauze after sterilization of whatever skin covering was left. No attempt at primary transplantation.

A "cold" abscess at the lower angle of the scapula was the next case, patient being a young man of about 20, existence of the swelling having been noticed about four years and no tubercular localization having been found on palpation in scapula or ribs; simple evacuation by means of trocar was deemed the safest treatment. In this connection Prof. Socin related a remarkable case of his practice, which has not yet been published.

A young man presented himself with a swelling in the groin, with impulse on cough, having all the other appearances of a hernia. He had had some disease of the spine some years before, leading to scoliosis. Prof. Socin diagnosed a cold abscess, incised in the groin and evacuated several pints of pus with pieces of the dorsal vertebræ.

The next case, a return of carcinoma in upper maxilla was treated by incision. Injury to the internal maxillary leading to great hemorrhage, which was arrested with a Langenbeck serre-fines, left in the wound, led to abandonment of further procedure.

A metastatic sarcoma of the size of a child's head in the groin was another case presented. It was the result of osteo-sarcoma of the great toe, which was amputated about two years ago. The Professor drew attention to his method of making a semi-plantar, semi-internal flap, thus bringing the cicatrix where it would be free from any pressure.

The inguinal sarcoma was operated on, not with the hope of cure or prolonging life, but to alleviate the annoyance to the patient resulting from probable extensive ulceration and the danger from hemorrhage.

An operation for radical cure of hernia presented some novel features. Prof. Socin makes a *horizontal* incision about two and one-half inches long about the level of the inguinal ring. He claims that being in a line with the natural folds, it heals more readily and gives sufficient room. The sac is passed through an incision in the transverse fascia, to which it is stitched with catgut. Four catgut sutures fasten it then in the inguinal canal. No attempt is made to approximate the pillars of the ring, which accounts for returns of the hernia, he is said to have. Owing to considerable handling of the tissues holding the spermatic cord, he introduced a glass drainage tube in the lower part of the canal. The natural opening is accurately closed with continued suture. He uses for that purpose a very fine aluminium wire, as flexible as silk, the proper alloy of which he determined after numerous experiments. He has not published yet his results.

I saw among other cases operated on, a nephrectomy for tubercular kidney, in which a considerable part of the peritoneum had been removed, an excision of the tongue for carcinoma with preliminary tracheotomy, and numerous other major operations, showing, that while Prof. Socin deprecates the excessive use of the knife, owing to the impunity conferred by Lister's discovery, he is well in the advance in the boldness of his operations. In his clinic he predicted that in the next generation a reaction would set in and that many surgical diseases, which at this time led to operations, will be cured by internal medication, and that internal medicine, which has been thrown into the shade by surgery during this age of new operations, will recover its place.

Sincerely yours, A. GIRARD.

ASSOCIATION NEWS.

The Association Train will leave Chicago Monday, May 28, via Santa Fe R. R., Rio-Grande Western, and Southern Pacific, for San Francisco via Denver, Colorado Springs, Leadville, Manitou, Glenwood Springs, Salt Lake, Ogden, Truckee and Sacramento. Returning, after the meeting, the train will pass through Sacramento and Northern California to Portland, thence east by way of the Northern Pacific R. R. to St. Paul. C. M. & St.P. R. St. Paul to Chicago. A stop over at Yellowstone National Park for those who desire it has been arranged, and it has been understood that at several places on the journey there will be

short stops. President Hibberd's party in a special car join the train at Chicago, and the St. Louis party are expected to join at Kansas City. From all points east and south, concentrating on this train should be effected at Chicago and St. Louis. For all information relating to this train, fares, etc., address G. M. Connell, 212 Clark st., Chicago, or any agent of Santa Fe line in other cities. Rates promised are the lowest excursion rates at time of departure.

Hotel Rates.—The following hotels, centrally situated and convenient to the place of meeting, have quoted special rates for members and their families, which will apply during the entire stay of the guests, who should, upon registering, signify that they are in attendance upon the meeting of the ASSOCIATION.

The rates quoted are for single persons, the variation depending upon the size, situation and appurtenances of the rooms, as single, en suite, with private bath, etc. Special arrangements will be made for families, or parties, on timely notice.

Some of the hotels entertain upon the American plan only, some upon the European plan only, and some upon either plan to suit guests.

Palace Hotel (headquarters) American plan (rooms and board) $3.50 to $5.50 per day; European plan (rooms only) $1.50 to $3.50.

Baldwin Hotel, American plan $3.50 to $5 per day; European plan $1 to $3 per day.

California Hotel, American plan $3.50 and up per day; European plan $1.50 and up per day.

Lick House, American plan $2.50 and up per day; European plan $1 and up per day.

Russ House, American plan $2 to $3.50 per day; European plan .50 to $2.00 per day.

Occidental Hotel, American plan only, $2.50 and up per day.

Hotel Pleasanton, American plan only, $2.50 to $5 per day.

Grand Hotel (connected with the Palace by a glass enclosed bridge across New Montgomery Street), European plan only, $1 to $2 per day.

In addition, there are many other hotels, boarding houses, lodging houses and restaurants contiguous to the place of meeting where one can be made happy and comfortable at less cost.

Post Office Section K is located in the Palace Hotel, on the office floor, adjacent to the registration room, where members can receive all mail matter by having it so addressed.

R. H. PLUMMER, Chairman.

San Francisco, March 4, 1894.

Section on State Medicine, AMERICAN MEDICAL ASSOCIATION It is proposed that diphtheria shall be the prominent subject of discussion at the coming session of this Section, to be held June 5, in San Francisco. Original work is desired, and all members of the ASSOCIATION interested in preventive medicine are invited to participate in the discussion. Papers on any subject relating to public health or preventive medicine will be welcome. Kindly notify, as soon as convenient, by sending title and outline of paper to

CHAS. H. SHEPARD, Secretary.

81 Columbia Heights, Brooklyn, N. Y.

Section on Surgery and Anatomy, AMERICAN MEDICAL ASSOCIATION, San Francisco meeting, June 5–8, 1894. It is proposed to devote a portion of the time of this Section to the systematic consideration of a few selected subjects, upon which papers, each not occupying more than ten minutes will be read. It is hoped that speakers discussing these papers will confine their remarks to brief addresses of five minutes' length. The topics and papers to be so presented are as follows:

1.—MALIGNANT GROWTHS.

The Pathology of Malignant Growths; E. Laplace, Philadelphia, Pa.

A Critique of the Sporozoan Theory of Malignant Neoplasms from a Micro-technical Standpoint; A. P. Ohlmacher, Chicago, Ill.

Clinical Recognition of Malignancy in Tumors; C. A. Wheaton, St. Paul, Minn.; Henry W. Coe, Portland, Oregon.

The Necessity of Early Surgical Interference in Malignant Tumors; R. A. McLean, San Francisco, Cal.

The Value of Caustics in Malignant Growths; John Parmenter, Buffalo, N. Y.

The Radical Cure of Malignant Tumors by Operation; J. H. Wythe, Oakland, Cal.

The Value of Inoculations with Septic or Toxic Agents in the Treatment of Malignant Neoplasms; John A. Wyeth, New York, N. Y.

2.—TUBERCULAR DISEASE OF JOINTS.

Early Symptoms and Diagnosis of Tubercular Joint Disease; Emmet Rixford, San Francisco, Cal.; A. B. Judson, New York, N. Y.

Conservative Treatment of Tubercular Joints; R. H. Sayre, New York, N. Y.; Harry M. Sherman, San Francisco, Cal.; James E. Thompson, Galveston, Texas.

Operative Treatment of Tubercular Joints; Robert W. Lovett, Boston, Mass.

Treatment of Tubercular Joints by Injections of Iodoform; N. Senn, Chicago.

Treatment of Tubercular Joints by Injections of Corrosive Sublimate; R. H. Plummer, San Francisco, Cal.

3.—HERNIA.

The Causation and Prevention of Hernia; James T. Jelks, Hot Springs, Arkansas; C. M. Richter, San Francisco, Cal.

The Management of Reducible Hernia; Emory Lanphear, Kansas City, Mo.; C. M. Fenn, San Diego, Cal.

The Treatment of Irreducible Hernia; James B. Eagleson, Seattle, Washington.

The Treatment of Strangulated Hernia; Joseph Ransohoff, Cincinnati, Ohio.

The Radical Cure of Hernia; W. E. S. Davis, Birmingham, Ala.; H. O. Marcy, Boston, Mass.

4.—HEMORRHOIDS, FISTULE, AND FISSURE.

The Pathology and Symptomology of Hemorrhoids, Anal Fistule, and Anal Fissure; J. M. Matthews, Louisville, Ky.; David Powell, Marysville, Cal.

Treatment of Hemorrhoids; H. M. Bishop, Los Angeles, Cal.; Charles B. Kelsey, New York, N. Y.

Treatment of Anal Fistule; J. McF. Gaston, Atlanta, Ga.; G. B. Somers, San Francisco, Cal.

Treatment of Anal Fissure; Thomas W. Huntington, Sacramento, Cal.; Lewis H. Adler, Jr., Philadelphia, Pa.

5.—FRACTURES.

Treatment of Fractures of the Lower End of the Humerus; Oscar H. Allis, Philadelphia, Pa.

Treatment of Fractures of the Lower End of the Radius; P. T. Conner, Cincinnati, Ohio; C. L. Bower, Philadelphia, Pa.

Treatment of Fractures of the Neck of the Femur; Bedford Brown, Alexandria, Virginia.

Treatment of Gunshot Fractures; George A. Goodfellow, Tucson, Arizona.

Treatment of Fractures of the Shaft of the Femur; Llewellyn Eliot, Washington, D. C.

Treatment of Open or Compound Fractures; H. H. Mudd, St. Louis, Mo.

6.—OBSTRUCTION TO URINATION IN THE MALE.

Effects of Obstruction in Urination Upon the Bladder and Kidneys; J. William White, Philadelphia, Pa.

Diagnosis and Treatment of Enlargement of the Prostate Gland; Hunter McGuire, Richmond, Va.; Wm. T. Belfield, Chicago, Ill.

Symptoms and Treatment of Stone in the Bladder; Wm. T. Briggs, Nashville, Tenn.

Symptoms and Treatment of Tumors of the Bladder; John B. Deaver, Philadelphia, Pa.; C. F. Buckley, San Francisco, Cal.

Treatment of Stricture of the Urethra; J. Rosenstein, San Francisco, Cal.

Members who have patients or specimens to exhibit bearing on these topics or who wish to make remarks in the discussion of them are cordially invited to be present during the meetings of the Section. The titles of other papers to be presented to the Section will be published when the program of the meeting of the ASSOCIATION is issued by the Committee of Arrangements.

JOHN B. ROBERTS, Chairman,
1627 Walnut Street, Philadelphia, Pa.
LLOYD W. MCRAE, Sec'y, Atlanta, Ga.

The Coming Meetings.—"We doctors ought to feel happy; we can pay our money and take our choice—the State Medical at San José in April, or the National at San Francisco in June. We can also combine business with pleasure by at-

tending the greatest attraction ever seen on the Pacific Coast, and, in many respects, save the World's Columbian Exposition, the greatest exhibition ever in America. This latter will be an extra inducement to the Eastern visitors to come to the Pacific Coast. So very rare is it for the National Association to go so far from the popular center, it behooves us to show our appreciation of the compliment by attending in large numbers and by causing a respectable increase in membership.

Los Angeles, considering her importance as a noted health resort and number of physicians, ought to have a larger representation in the National Association. Of all places in the world, this city can least afford to be local, and that, too, upon medical matters. With us there will be a twofold good—the benefit derived from the attendance upon the meetings of the Society, and the indirect advantage accruing to the city. Many of the visitors will undoubtedly pay their respects to Los Angeles. All Southern California representatives will be eagerly questioned. The old story told on the Californian visiting his Eastern friends is probably true. So frequent had been his praises of the magnificent weather of this favored State, that by preconcerted arrangement every one of his callers asked, "How did you leave the climate?" Though this was a joke, yet the inquiry as to climate is the first question asked in good faith by the rest of the country—save the dwellers in Florida, or some other place of low latitude.

In pleading for the National we by no means wish to belittle the claims of the State Association. Southern California is a very important part of the State climatically, and it is very essential for its proper recognition that a goodly number of its physicians be present in San José in April.

On the day before the convening of the State society there will be held Monday, the 16th inst., the second annual State Sanitary Convention. The time is so arranged so as not to interfere with the sessions of the State Society, and at the same time allow one trip to do for both. There is room for a great deal of work in this direction. As this will be under the auspices of the State Board of Health, its utterances will have a semi-official bearing and corresponding weight with the laity. Preventive and State medicine will be the themes chiefly discussed. A topic, which is otherwise mentioned in this number, will be discussed under the following resolution:

Resolved, That hereafter consumption (and other diseases due to the bacillus tuberculosis) should be included in the list of diseases dangerous to the public health; requiring notice by householders and physicians to the local health officer as soon as such disease is recognized.

The utter disregard of many patients and landlords for the health of others can only be overcome by proper measures initiated by the physicians themselves."—*Southern California Practitioner.*

SOCIETY NEWS.

The Second Sanitary Convention of the State of California.—The second annual Sanitary Convention will be held at San José on April 16, the day preceding the meeting of the State Medical Society. The convention will be held under the auspices of the State Board of Health, which will pay all the bills. Invitation is extended to all medical men and sanitarians to be present and to present papers in the interest of preventive measures.—*Pacific Medical Journal.*

The Morgan County (Illinois) Medical Society held its regular monthly meeting in the Society's rooms, Jacksonville, March 8; President Frank P. Norbury in the chair. C. E. Ruth, Professor of Anatomy and Clinical Surgery, Keokuk (Iowa) Medical College, by special invitation demonstrated, upon a dog, the use of the "Murphy button" in intestinal surgery. The meeting was well attended. A vote of thanks was tendered Prof. Ruth for his highly interesting and scientific address and demonstration.

The Medical Society of the State of California.—The twenty-fourth annnal session of the Medical Society of the State of California will convene at San José, April 17, 18 and 19, 1894. Chairmen of committees are requested to send the titles of their papers by the middle of March, to the Secretary of the Committee of Arrangements, Dr. John Wagner, Sixteenth and Valencia Streets, San Francisco. A large and interesting meeting is promised, and it is hoped that all members will endeavor to be present to give our friends in San José a chance to show what they can do when they try. —*Pacific Medical Journal.*

The Association of Military Surgeons.—The fourth annual meeting of the Association of Military Surgeons of the United States will be held in Washington, D. C., May 1, 2 and 3, 1894.

This National organization is composed of medical officers of the U. S. Army, U. S. Navy, National Guard of the United States and the Hospital Marine Service—in whose service are many of the most celebrated and distinguished surgeons of our country. A brilliant and able literary program will be presented. The afternoon of one day will be set apart for an object lesson from the "Manual of Drill," by the Hospital Corps. The evenings will be given up to social entertainments. There will be about five hundred delegates in attendance.

GEORGE HENDERSON,
Chairman Committee of Arrangements.

Twenty-first National Conference of Charities and Correction, Nashville, Tenn., May 23-28, 1894. Provisional Program. The Twenty-first National Conference of Charities and Correction will be held at Nashville, Tenn., beginning May 23 and closing Monday, May 28.

The Executive Committee has adopted the following provisional program, which is subject to amendment. A revised edition will be published later:

Wednesday—May 23, 8 P.M., Opening Exercises and Reception.

Thursday—May 24, 9:30 A.M., Reports from States. 10 A.M., State Boards of Charities. Papers and Discussions. 2 P.M., Section Meetings. 8 P.M., Charity Organization in Cities. Ten minute reports from cities upon this winter's emergency work.

Friday—May 25, 9:30 A.M., Reports from States. 10 A.M., The Insane. Papers and Discussion. 2:30 P.M., Section Meetings. 8 P.M., Juvenile Reformatories. Papers and Discussions.

Saturday—May 26, 9:30 A.M., Reports from States. 10 A.M., The Feeble Minded. Papers and Discussions. 2:30 P.M., Section Meetings. 8 P.M., Sociology in Institutions of Learning. Papers and Discussions.

Sunday—May 27, 11 A.M., Conference Sermon. 8 P.M., Child Saving Work. Ten minute addresses.

Monday—May 28, 9:30 A.M., Reports from States. 10 A.M., Prisons and Reformatories. Papers and Discussions. 2:30 P.M., Section Meetings. 8 P.M., Training Schools for Nurses. Brief Addresses. Closing exercises of the Conference.

The membership of the Conference includes members of State boards of charities, delegates from charity organization societies, officers of public and private charitable and correctional institutions, official delegates appointed by the Governors of States, and all other persons directly or indirectly connected with charitable work. All persons included under this general description are invited to attend the Conference, and the boards in charge of charitable or correctional institutions, public or private, are invited to send delegates.

The Conference is non-sectarian and non-political, whose aims are purely scientific and philanthropic.

The local arrangements for this meeting are in charge of a local committee composed of some of the best citizens of Nashville, who will make the necessary arrangements for reduced railroad and hotel rates, of which due announcement will hereafter be made.

A large attendance is expected, and the papers and discussions will be of a high order of scientific value and practical utility.

Persons receiving this circular will confer a favor by sending the Secretary the names of persons in their cities or States who are officially or personally interested in charitable or correctional work, for the purpose of having circulars sent them. Please give the official relation to institu-

tions or societies, and in large cities the street and number of residence, if possible.

L. C. STORRS, Lansing, Mich., President.
A. O. WRIGHT, Madison, Wis., Secretary.
JOHN M. GLENN, Baltimore, Md., Treas.

MISCELLANY.

Dr. J. W. C. Neal of Gettysburg, Pa., at a meeting of the State Board of Charities held at Harrisburg on March 1, was chosen a member of the Lunacy Commission.

Died of Ruptured Heart.—Sewall Parker, a young man of 23, died suddenly March 4, at Toledo, Ohio, while sparring with a friend. The postmortem examination made two days after showed that Parker's death was caused by a broken heart, that organ being literally rent in two.

Registration of Tuberculosis.—The State Board of Health and Bureau of Vital Statistics of Washington, at its recent annual meeting, passed an order requiring physicians practicing within the State to report all cases of pulmonary tuberculosis.

No attempt will be made at isolation, but a printed circular containing full directions for the sanitary care of such patients will be sent out by the Board for the guidance of the persons having them in charge.

Yellow Fever Spreading at Rio.—A cable from London bearing date March 7, says Captain John Piper, who succeeded Captain Lang as senior officer of the British fleet at Rio Janeiro, cabled to the Government to-day that yellow fever is spreading in the city. He recommends that all vessels be withdrawn from the entire harbor and that the port be closed. Advices from Rio Janeiro of March 9, state that all the foreign vessels of war have left the harbor, with the exception of Admiral Benham.

Dr. J. H. Ford of Wabash, Ind., has been appointed chief surgeon of the "Big Four" Railroad system. It is the intention to establish a hospital system like that on the Wabash and Missouri Pacific Roads. Dr. Ford will have jurisdiction over the "Big Four" and the Peoria & Eastern. It is the intention to erect a large hospital at Indianapolis to accommodate the divisions centering there, and to establish a hospital in every other division if the employes are favorable.

He Likes Our Reviews.—It was with pleasure that we read the greater portion of our review of Dr. Matthieu's book on diseases of the stomach, and the major portion of our notice of Professor Koch's book on operative surgery, in the March number of the *Southern Practitioner*. It would have added to our pleasure if the articles had been properly credited to the JOURNAL instead of being used as original matter of the *Practitioner*. The notices in question appeared in our issue of February 17.

Faxton Hospital, Utica, N. Y.—The following staff appointments have been made by Dr. James H. Glass, Surgeon-in-Charge of Faxton Hospital:

Surgical Service—A. R. Simmons, Judson G. Kilbourn, F. F. Ellinwood.

Medical Service—H. C. Palmer, Charles B. Tefft, F. H. Brewer, James M. Ross, Walter B. Palmer, LeRoy Jones, L. F. Pattingill, M. J. Davis, William Powell, W. H. Brownell, C. R. Ward, H. E. Shumway.

Eye, Ear and Throat Service—A. R. Simmons; Charles W. Crumb, Assistant.

Obstetrical Service—F. H. Brewer, W. H. Brownell.

Gynecological Service—James H. Glass, Judson G. Kilbourn.

Pathologist—Theodore Deecke.

Consulting Staff—G. Alder Blumer, Utica; Stephen A. Ingham, Little Falls; Claude Wilson, Waterville; J. F. Huntley, Oneida; L. Swartwout, Prospect; George Graves, Herkimer; D. A. Barnum, Cassville; D. H. Roberts, Trenton; J. W. Douglas, Boonville; G. I. Pollard, Oriskany Falls; H. G. Dubois, Camden; M. W. Hurst, Holland Patent; G. A. Armstrong, West Winfield; I. M. Comstock, New York Mills; O. Langworthy, Hamilton; J. E. Casey, Mohawk; I. S. Edsall, Middleville; C. R. Hart, New Hartford; C. M. Sefler, Gloversville; George Fisher, Clayville; Alfred Goss, Adams; C. C. Veeder, St. Johnsville.

Home for Feeble Minded Children.—The Board of Directors of the Pennsylvania Training School for Feeble Minded Children, at Elwyn, Pa., at their meeting on March 2, elected a medical board of consultants for the first time in the history of the institution. These gentlemen have consented to give their professional services gratuitously and to aid in the cure and the mental and physical improvement of the children. They are: Surgeons, Dr. John B. Deaver, Dr. W. W. Keen; physicians, Dr. John Madison Taylor, Dr. D. T. Laine; neurologists, Dr. S. Weir Mitchell, Dr. H. C. Wood, Dr. C. K. Mills, Dr. James Hendrie Lloyd; orthopedic surgeon, Dr. G. T. Morton; otologist, Dr. C. S. Turnbull; ophthalmologist, Dr. S. D. Risley; laryngologist, Dr. S. Solis-Cohen; gynecologist, Dr. Anna E. Broomall; pathologists, Dr. H. W. Cattell, Dr. Joseph Leidy; dental surgeon, Dr. Thomas C. Stellwagen.

The chief physician, Dr. Martin W. Barr, and the assistant physicians, Drs. Frank White and Louise H. Llewellyn, are also members of the medical board. There are at present 909 children in the school, of whom 100 are supported by the city of Philadelphia, 550 by the State of Pennsylvania, and the remainder by the District of Columbia, by relatives, or by the "Free Fund" of the institution.

Appointed General Superintendent of the Canadian Quarantine Service.—Dr. Frederick Montizambert, has recently been appointed by the Dominion Government, General Superintendent of the Canadian Quarantine Service. Dr. Montizambert has for many years had charge of the Quarantine Station at Grosse Isle, in the St. Lawrence River about thirty miles below Quebec. This station during the cholera and ship fever times, commencing in 1832 and extending about to 1855, was the best equipped in the world. Steam having supplanted the sailing vessel, the plant was for many years crippled, on account of the steamships not being able to land at the wharf. About ten years ago Dr. Montizambert began to urge the building of a pier to deep water, so that vessels could come alongside, and other improvements and additions to the plant as experience demonstrated were necessary. He finally succeeded, so that by the beginning of the quarantine season of 1893 the changes desired were completed, and with the sub-station at Point Levi near Quebec it is once more the most complete quarantine station in the world. During the past season all the baggage of immigrants was inspected and disinfected whether cholera, or cholera suspects were on board or not, and in this way afforded greater protection to the United States (as nearly all the immigrants went to the United States) than any of our own quarantines. It not alone protected us from cholera, but other infectious diseases. He now will have supervision of the stations at Halifax, Grosse Isle, and those on the Pacific coast. Would that we could have such supervision of the quarantines of the United States. Dr. Montizambert is one of the best quarantine officers on this continent; a good executive, and an accomplished sanitarian, and always acts in harmony with the sanitary authorities of the United States. In 1890 he was elected the sixteenth President of the American Public Health Association, the first time in the history of that organization that a non-resident of the United States was selected for that honorable position.

Water Supply of Bridgeport, Conn.—Dr. Garlick of the Bridgeport Board of Health, made a statement before the Water

Investigating Committee, February 28, the substance of which was that the water taken from the upper and lower dams for the purpose of examination was found impure and highly prejudicial to the health of the community. According to the Bridgeport *Farmer*, he asserted that the typhoid fever outbreak last summer was caused by impure water. There were in all sev.. ' cases, two of which were fatal.

He gave the details of the examination of the water which he said was performed by Dr. Foote, the bacteriologist of Yale. The result of the test demonstrated the presence of germs which, while corresponding with and possessing all the known features of the typhoid fever germ, might not have been the real thing.

Speaking of his visit to the dams last summer for the purpose of securing the samples of water for analysis, the Doctor said:

"We found evidences of filth and uncleanliness on all sides. Especially filthy were the quarters occupied by the Italian workmen. It was clear that the sanitary condition of the surroundings was not what it should have been. The privy vaults were in a deplorable condition, and had a heavy rain storm or freshet occurred the refuse of these depositions would in all probability have been forced back into the reservoirs, with the result of tainting the water which flowed to the consumer."

The Doctor believed that the impure water and surroundings were responsible for the illness of the typhoid fever victims among the workmen.

President Sherwood, of the Hydraulic Company, inquired if Dr. Garlick was positive that the disease the men died of was typhoid fever, and the latter replied affirmatively.

Mr. Sherwood asserted that Dr. Bill, who attended some of the men, said that the symptoms were not those which indicated typhoid, but fever of another type. Dr. Garlick said examination of the water drawn from the faucet in his office showed it to be exceptionally pure, and from this he judged that it was on account of its being filtered. At that time the Board of Health recommended the use of private filters in all homes and also wherever possible the boiling of the water used for drinking purposes.

When asked if he had any idea of what would improve the quality of the public water supply he said that as an individual he did not care to take the responsibility of offering a suggestion but intimated that the Health Board might submit a proposition for remedial measures.

Engineer Hotchkiss, of fire steamer No. 3, and Engineer Tracey, of No. 4, said that as a general thing the fire supply was adequate, but on several occasions they had been compelled to remain idle owing to the apparent absence of sufficient force in the water pipes. In their opinion this was due to some irregularity of the water mains and not the hydrants.

Health Officer FitzGibbon substantiated the statements of Dr. Garlick. Of 102 cases of typhoid fever reported since 1889, 38 proved fatal. Some of the fatal ones were in his opinion due to impure water.

James Lyons, engineer at Hincks & Johnson's carriage factory, said he often found that there was not enough water in the boilers to get up steam. President Sherwood said that the capital stock of the Hydraulic Company was between $700,000 and $800,000. He refused to say how much the Company expended in constructing its system, intimating that the question was an improper one. City Attorney Davenport explained to the committee the legal relations between the Company and the city, and an adjournment was made subject to the call of the chair.

Philadelphia Notes.

THE POLYCLINIC TRUSTEES have just signed the contract for improvements which will cost near fifty thousand dollars this sum having been appropriated for the institution by the State Legislature at the last session. Among the additional accommodations are a three story laboratory building, a mortuary or autopsy room, a clinical amphitheater, and wards aggregating about fifty beds. The alterations will be made during the summer and completed by September.

THE GERMAN HOSPITAL—has also just adopted plans for enlarging its administration building by bringing it out to Corinthian Avenue. The addition will be modern in style 80 feet front and 25 feet in depth, and three stories in height, and will afford additional wards and private rooms.

THE PUBLIC SERVICES.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from March 3, 1894, to March 9, 1894.

Major JOHN VAN R. HOFF, Surgeon U. S. A., is hereby assigned to the charge of the office and duties of the Medical Director, Hdqrs. Dept. of the East, during the temporary absence of Col. JOSEPH R. SMITH, Asst. Surgeon General, Medical Director of the Department.

First Lieut. CHARLES WILLCOX, Asst. Surgeon U. S. A., is relieved from temporary duty at Boise Bks., Idaho, and ordered to return to his proper station, Presidio of San Francisco, Cal. Par. 7, S. O. 54, A. G. O., Hdqrs. of the Army, March 5, 1894.

Capt. R. B. BALL, Asst. Surgeon U. S. A. (Ft. Monroe, Va.), is hereby granted leave of absence for one month.

Capt. R. W. JOHNSON, Asst. Surgeon U. S. A., will proceed to Ft. Monroe, Va., for temporary duty during the absence on leave of Capt. R. B. BALL, Asst. Surgeon. Upon the return of the latter from leave, Capt. JOHNSON will return to his station, Washington Bks., D. C.

Major TIMOTHY E. WILCOX, Surgeon U. S. A., is granted leave of absence for one month.

Major JOHN D. HALL, Surgeon U. S. A., leave of absence granted is extended one month.

Capt. HENRY L. RAYMOND, Asst. Surgeon, is granted leave of absence for four months, to take effect on or about Aug. 10, 1894.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending March 10, 1894.

P. A. Surgeon F. W. OLCOTT, from Naval Hospital, New York, and to the "Richmond."

P. A. Surgeon S. S. WHITE, from the "Richmond," and to the Naval Academy.

P. A. Surgeon L. W. CURTIS, from the Naval Academy, Annapolis, and wait orders.

P. A. Surgeon G. T. LUMSDEN, from the "Kearsarge," and wait orders.

Medical Inspector W. H. JONES, ordered before the Retiring Board.

Asst. Surgeon C. E. RIGGS, from Naval Hospital, Mare Island, Cal., and to Naval Laboratory and Department of Instruction, New York.

Surgeon D. N. BERTOLETTE and Asst. Surgeon J. M. MOORE, ordered to the "Atlanta."

Asst. Surgeon J. E. PAGE, ordered to examination preliminary to promotion.

LETTERS RECEIVED.

(A) Asdale, W. J., Pittsburg, Pa.; Auld, J. M., Chicago, Ill.
(B) Birney, E., Greesly, Iowa; Brown, R. S., Brooklyn, N.Y.; Berger, S. C., Philadelphia, Pa.; Billings, John S., Washington, D. C.; Brinkerhoff, W. C., Chicago, Ill.; Belkamp, L. J., St. Helena, Cal.
(C) Connor & Wylie, W. Superior, Wis.; Currier, C. G., New York, N. Y.; Culhane, T.H., Rockford, Ill.; Crothers, T. D., Hartford, Conn.
(D) Devlin, J. B., Denver, Colo.; Drevet Manf'g Co., New York, N.Y.
(E) Eagleson, J. B., Seattle, Wash.
(F) Fradd, Nathan, Louisville, Ky.; Formento, Felix, New Orleans, La.; French, Pinckney, St. Louis, Mo.
(G) Gage, Homer, Worcester, Mass.
(H) Hudson, W. G., New York, N. Y.; Hall, Rufus B., Cincinnati, Ohio; Hazelwood, C., Grand Rapids, Mich.
(L) Labordine Chemical Co., St. Louis, Mo.
(M) Mealer, W. K., St. Louis, Mo.; McArthur Hypophosphite Co., Ansonia, Conn.; Monette, Geo. N., New Orleans, La.; Montgomery, E. E., Philadelphia, Pa.
(N) New York Post-Graduate Med. School, New York, N. Y.
(O) O'Brien, J. S., Milwaukee, Wis.
(P) Petty, J. T., Washington, D. C.; Penfield, R. C., Philadelphia, Pa.; Plummer, R. H., San Francisco, Cal.
(R) Rauch, L., Lebanon, Pa.
(S) Shepard, Chas. H., Brooklyn, N. Y.; Stair, M. P., Ft. Atkinson, Wis.; Stowell, Chas. H., Washington, D. C.
(T) Tracy, J. L., (2) Toledo, Ohio; The Medical World, Philadelphia, Pa.; Thorpe, M. H., Liberty Hall, Texas; The American Physicians Sanitarium Association, Washington, D. C.
(U) University of Buffalo, N. Y.
(V) Van Hook, Weller, Chicago, Ill.
(W) Wadsworth, L. C., Newport, Ky.; Woodbridge, John E., Youngstown, Ohio; Wells, G. R., Livingston, Mont.; Ward Brothers, Jacksonville, Ill.; Wood, E. A., Pittsburg, Pa.
(Y) Yates, W., Chicago, Ill.

PAMPHLETS RECEIVED.

Mechanism and Personality. By Francis A. Shoup, D.D.

Erythema Exfoliativum Recurrens. By A. H. Ohmann-Dumesnil, M.D.

Twenty-sixth Annual Report, New York Orthopædic Dispensary and Hospital Bulletin, Medical Society of Woman's Medical College. Baltimore, Md.

Twenty-third Annual Report Woman's Hospital. Philadelphia.

The Operative Treatment of Complete Prolapsus Uteri et Vaginæ. By Geo. M. Edebohls, A.M., M.D.

Latrines of the East. By Edw. S. Morse.

Total Extirpation of the Uterus. By George M. Edebohls, A.M., M.D.

The Technique of Total Extirpation of the Fibromatous Uterus. By George M. Edebohls, A.M., M.D.

In Memoriam—Chas. G. Smith. By Chicago Literary Club.

Society of the Lying-in Hospital, City of New York—Medical Report.

Studies from Department of Pathology, College of Physicans and Surgeons, Columbia College, N. Y., Vol. III, 1892-1893.